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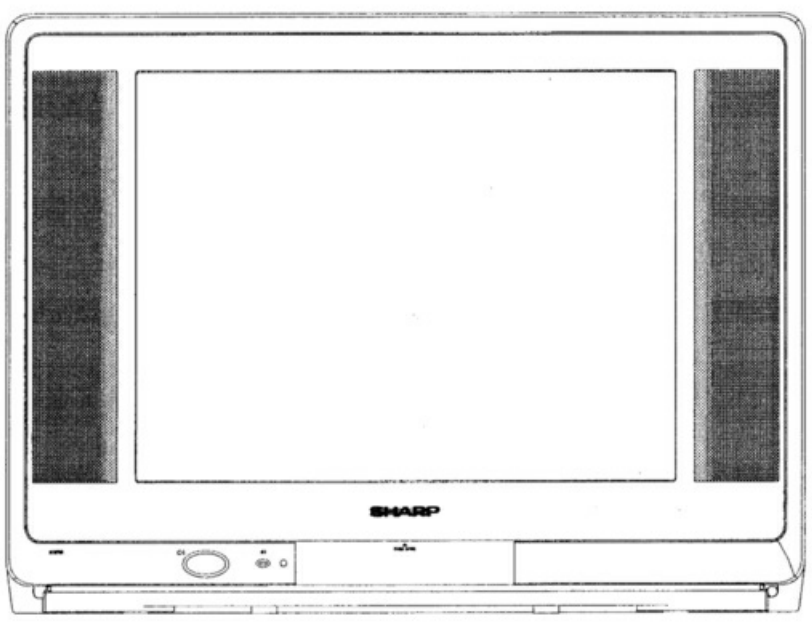
SHARP 21XF30 SERVICE MANUAL



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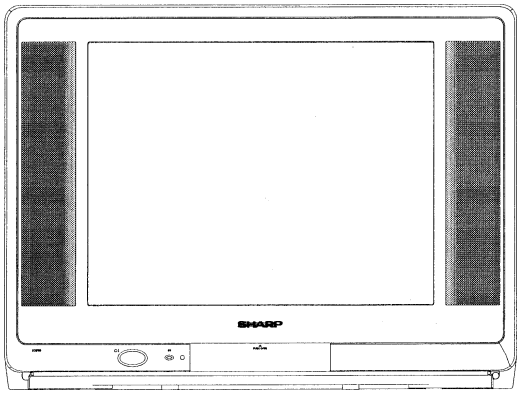
SHARP SERVICE MANUAL

S42H621XF30//



COLOUR TELEVISION
Chassis No. UAF

MODELS **21XF30**
21XF50

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

FEATURE

- World Multi 21 System(21XF50)
- NICAM/A2 (21XF50)
- Mono Bilingual (21XF30)
- AV Stereo (21XF30)
- Full Auto Search System
- 100-CH Program Memory
- CATV (Hyper Band) Ready
- Surround System
- English & Thailand Language OSD
- ON/OFF/Reminder Timer
- High Contrast Picture (Black Stretch Circuit)
- Colour Comb Filter (NTSC only)
- Blue Back Noise Mute
- Front AV IN/ Rear AV IN/OUT Terminal
- Hotel Mode

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WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis. To prevent electric shock, do not remove cover. No user – serviceable parts inside. Refer servicing to qualified service personnel.

SPECIFICATIONS

Convergence ..... Self Convergence System
Focus ..... Quadra-Potential Electrostatic
Sweep Deflection ..... Magnetic

Intermediate Frequencies
- Picture IF Carrier 38.9MHz
- Sound IF Carrier Frequency
  - 5.74MHz 33.16MHz
  - 5.50MHz 33.40MHz
- Colour Sub-Carrier Frequency 34.47MHz

Power Input ..... 110 ~ 240V AC 50/60 Hz
Power Consumption ..... 111W(21XF30), 112W(21XF50)
Audio Power Output Rating ..... 7.5W x 2(at Max.)

Speaker
- Size ..... 12 x 6 cm (2pc)
- Voice Coil Impedance ..... 8 ohms at 400 Hz

Aerial Input Impedance
- VHF/UHF ..... 75 ohms Unbalanced

Raceiving System ..... CCIR/PAL B, G

Tuner Ranges
- VHF-Channels ..... 48.25 MHz thru 463.25 MHz
- UHF-Channels ..... 471.25 MHz thru 863.25 MHz

Dimensions ..... Width: 621.0mm
Height: 468.0mm
Depth: 474.0mm
Weight(approx): 25 kg
Cabinet material ..... All Plastics

Specifications are subject to change without prior notice.

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be done by qualified service personnel only.

SERVICE OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by Connecting a 10K ohm Resistor in series with an insulated wire(such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord should be disconnected from AC outlet.)

1. **Picture tube in this receiver employs integral implosion protection.**
2. **Replace with tube of the same type number for continued safety.**
3. **Do not lift picture tube by the neck.**
4. **Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.**

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute Minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the followin precautions should be observed:

1. **When repairing the circuit, be sure not to increase the high voltage to more than 30.0kV (at beam 0 μA) for the set.**
2. **To keep the set in a normal opeartion , be sure to make it function on 27.5kV ±1.5kV (at beam 1,350 μA) in the case of the set. The set has been factory - Adjusted to the above-mentioned high voltage.**
   - ∴ **If there is a possibility that the high voltage fluctuates as a result of the repairs, never forget to check for such high voltage after the work.**
3. **Do not substitute a picture tube with unauthorizerd types and/or brands which may cause excess X-ray radiation.**

BEFORE RETURNING THE RECEIVER

Before returning the receiver to the user, perform the following safety Checks.

1. **Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.**
2. **Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor- capacity networks, mechanical insulators etc.**

ADJUSTMENT PRECAUTIONS

This model's setting are adjusted in two different ways: through the I²C bus control and in the conventional analog manner. The adjustments via the I²C bus control include preset-only items and variable data.

1. Setting the service mode by the microprocessor.

①. Short TP1001 & TP1002 to switch to the service mode position, and the microprocessor is in input mode. (Adjustment through the I2C bus control). (Use JWS Key to set as well).

②. Press the CH DOWN / UP key on the remote controller to get ready to select the mode one by one.

③. Press the CH DOWN / UP key on the remote controller to select the modes reversibly one by one.

④. Using the VOLUME UP/ DOWN key on the remote controller, the data can be modified.

⑤. Disconnect TP1001 & TP1002 to switch to the normal mode (OFF) position, and the microprocessor is in out of the service mode.

2. Factory Presetting.

①. Short TP1001 & TP1002 to switch to the service mode position and turn on the main power switch. Initial values are automatically preset, only when a new EEPROM is used (Judge with the first 4 bytes).

②. The initial data are preset as listed in page E-9, E-10 & E-11.

③. Make sure the data need modify or not (Initial data).

Note: Once the chassis has been assembly together and ready to be POWER ON for the FIRST TIME, make sure to short TP1001 & TP1002 to switch to the service mode position first and then turn on the main power switch (See 2-(1) above).

Precaution: If haven't done this initiation, it may possibly generate excessive Beam current.

3. For reference please check with memory map (UAF Series type RH-iX3411CEN5 Attachment)

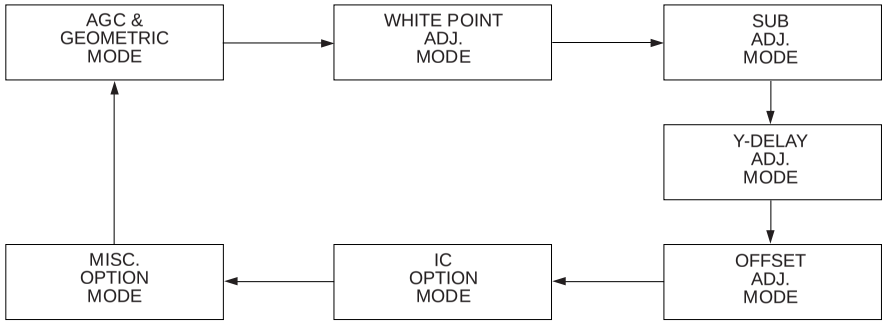
4. Trouble indications

If the set is interrupted by IIC bus line error, the following indicators work to identify a spot in trouble.

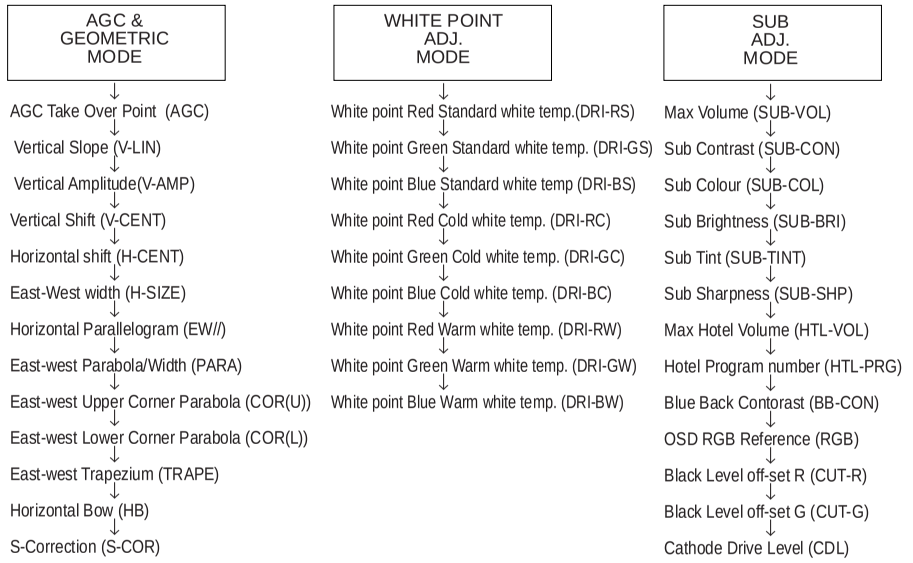
LED (RED) flashing:	Flashing time	Part's Ref.No.	Remarks
	2	IC1003	EEP ROM
	3	IC801	TV PROCESSOR
	4	IC401	AV SWITCH
	5	IC305	SOUND PROCESSOR
	6	IC2300	NICAM/A2 DECODER
	8	TU201	TUNER

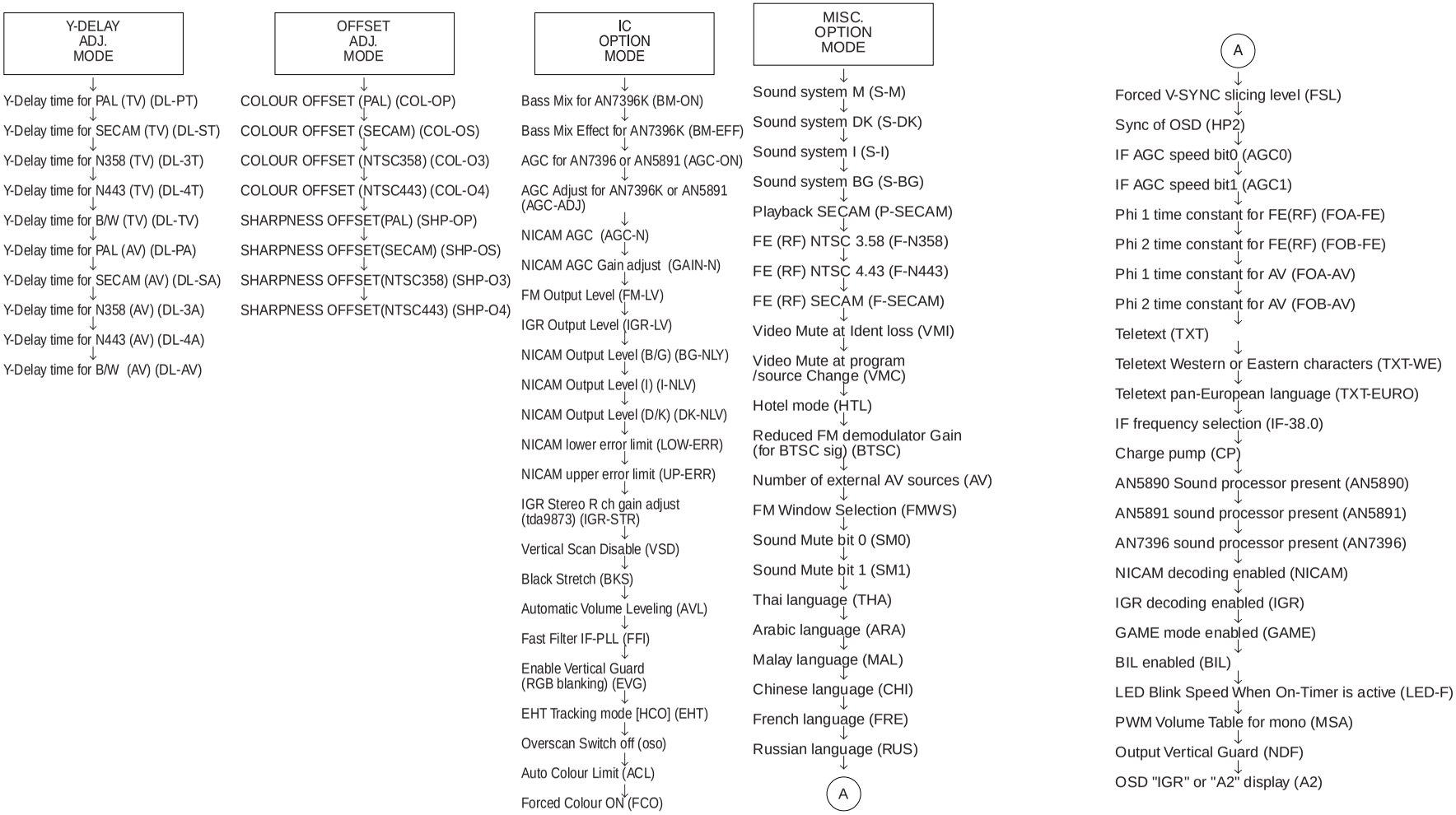
■ SERVICE MODE

(1) In the Service Mode, Key is used to select the mode in the following order.



FORWARD : CH DOWN KEY
REVERSE : CH UP KEY
* ( ) means OSD display.


AGC & GEOMETRIC MODE
AGC Take Over Point (AGC)
Vertical Slope (V-LIN)
Vertical Amplitude(V-AMP)
Vertical Shift (V-CENT)
Horizontal shift (H-CENT)
East-West width (H-SIZE)
Horizontal Parallelogram (EW//)
East-west Parabola/Width (PARA)
East-west Upper Corner Parabola (COR(U))
East-west Lower Corner Parabola (COR(L))
East-west Trapezium (TRAPE)
Horizontal Bow (HB)
S-Correction (S-COR)
WHITE POINT ADJ. MODE
White point Red Standard white temp.(DRI-RS)
White point Green Standard white temp. (DRI-GS)
White point Blue Standard white temp (DRI-BS)
White point Red Cold white temp. (DRI-RC)
White point Green Cold white temp. (DRI-GC)
White point Blue Cold white temp. (DRI-BC)
White point Red Warm white temp. (DRI-RW)
White point Green Warm white temp. (DRI-GW)
White point Blue Warm white temp. (DRI-BW)
SUB ADJ. MODE
Max Volume (SUB-VOL)
Sub Contrast (SUB-CON)
Sub Colour (SUB-COL)
Sub Brightness (SUB-BRI)
Sub Tint (SUB-TINT)
Sub Sharpness (SUB-SHP)
Max Hotel Volume (HTL-VOL)
Hotel Program number (HTL-PRG)
Blue Back Contorast (BB-CON)
OSD RGB Reference (RGB)
Black Level off-set R (CUT-R)
Black Level off-set G (CUT-G)
Cathode Drive Level (CDL)


Y-DELAY ADJ. MODE
Y-Delay time for PAL (TV) (DL-PT)
Y-Delay time for SECAM (TV) (DL-ST)
Y-Delay time for N358 (TV) (DL-3T)
Y-Delay time for N443 (TV) (DL-4T)
Y-Delay time for B/W (TV) (DL-TV)
Y-Delay time for PAL (AV) (DL-PA)
Y-Delay time for SECAM (AV) (DL-SA)
Y-Delay time for N358 (AV) (DL-3A)
Y-Delay time for N443 (AV) (DL-4A)
Y-Delay time for B/W (AV) (DL-AV)
OFFSET ADJ. MODE
COLOUR OFFSET (PAL) (COL-OP)
COLOUR OFFSET (SECAM) (COL-OS)
COLOUR OFFSET (NTSC358) (COL-O3)
COLOUR OFFSET (NTSC443) (COL-O4)
SHARPNESS OFFSET(PAL) (SHP-OP)
SHARPNESS OFFSET(SECAM) (SHP-OS)
SHARPNESS OFFSET(NTSC358) (SHP-O3)
SHARPNESS OFFSET(NTSC443) (SHP-O4)
IC OPTION MODE
Bass Mix for AN7396K (BM-ON)
Bass Mix Effect for AN7396K (BM-EFF)
AGC for AN7396 or AN5891 (AGC-ON)
AGC Adjust for AN7396K or AN5891 (AGC-ADJ)
NICAM AGC (AGC-N)
NICAM AGC Gain adjust (GAIN-N)
FM Output Level (FM-LV)
IGR Output Level (IGR-LV)
NICAM Output Level (B/G) (BG-NLY)
NICAM Output Level (I) (I-NLV)
NICAM Output Level (D/K) (DK-NLV)
NICAM lower error limit (LOW-ERR)
NICAM upper error limit (UP-ERR)
IGR Stereo R ch gain adjust (tda9873) (IGR-STR)
Vertical Scan Disable (VSD)
Black Stretch (BKS)
Automatic Volume Leveling (AVL)
Fast Filter IF-PLL (FFI)
Enable Vertical Guard (RGB blanking) (EVG)
EHT Tracking mode [HCO] (EHT)
Overscan Switch off (oso)
Auto Colour Limit (ACL)
Forced Colour ON (FCO)
MISC. OPTION MODE
Sound system M (S-M)
Sound system DK (S-DK)
Sound system I (S-I)
Sound system BG (S-BG)
Playback SECAM (P-SECAM)
FE (RF) NTSC 3.58 (F-N358)
FE (RF) NTSC 4.43 (F-N443)
FE (RF) SECAM (F-SECAM)
Video Mute at Ident loss (VMI)
Video Mute at program /source Change (VMC)
Hotel mode (HTL)
Reduced FM demodulator Gain (for BTSC sig) (BTSC)
Number of external AV sources (AV)
FM Window Selection (FMWS)
Sound Mute bit 0 (SM0)
Sound Mute bit 1 (SM1)
Thai language (THA)
Arabic language (ARA)
Malay language (MAL)
Chinese language (CHI)
French language (FRE)
Russian language (RUS)
A
A
Forced V-SYNC slicing level (FSL)
Sync of OSD (HP2)
IF AGC speed bit0 (AGC0)
IF AGC speed bit1 (AGC1)
Phi 1 time constant for FE(RF) (FOA-FE)
Phi 2 time constant for FE(RF) (FOB-FE)
Phi 1 time constant for AV (FOA-AV)
Phi 2 time constant for AV (FOB-AV)
Teletext (TXT)
Teletext Western or Eastern characters (TXT-WE)
Teletext pan-European language (TXT-EURO)
IF frequency selection (IF-38.0)
Charge pump (CP)
AN5890 Sound processor present (AN5890)
AN5891 sound processor present (AN5891)
AN7396 sound processor present (AN7396)
NICAM decoding enabled (NICAM)
IGR decoding enabled (IGR)
GAME mode enabled (GAME)
BIL enabled (BIL)
LED Blink Speed When On-Timer is active (LED-F)
PWM Volume Table for mono (MSA)
Output Vertical Guard (NDF)
OSD "IGR" or "A2" display (A2)

USER DATA IN SERVICE MODE

* While SERVICE mode ON, EEPROM DATA will switch to the service data.
  Also, once SERVICE mode OFF, EEPROM will switch back to previous USER DATA.
* In the service mode, the user data establish as below,

	USER DATA
CONTRAST	MAX (64/64)
COLOUR	CENT (32/64)
BRIGHTNESS	CENT (32/64)
TINT	CENT (32/64)
SHARPNESS	CENT (32/64)
WHITE TEMP	CENT (32/64)
TREBLE	CENT (32/64)
BASS	CENT (32/64)
SURROUND	OFF
BALANCE	CENT (32/64)
S-VOLUME	MIN (1/64)
BLUE BACK	OFF
C SYSTEM	AUTO
S SYSTEM	*1

*1: For each CH,data is same as before switch to Service Mode

* Direct Key-in

MODE	KEY-IN KEY
AGC	FUNCTION
SUB-BRI	BRIGHTNESS UP
DRI-GS	TEXT
DRI-BS	PICTURE
CUT-R	SKIP
CUT-G	F2
V-LIN	CONTRAST DOWN
V-CENT	BRIGHTNESS DOWN
V-AMP	COLOUR DOWN
H-CENT	TINT DOWN
H-SIZE	BALANCE RIGHT
PARA	TREBLE UP
TRAPE	BASS UP
EW//	SHARPNESS DOWN
SUB-COL	COLOUR UP
SUB-TINT	TINT UP

After short TP1001 & TP1002, and turn on the MAIN POWER switch, read data from EEPROM address 00H ~ 03H, and compare to the list below, if different, initialize the EEPROM.

Address	:	Data	Address	:	Data
00H	:	55H	02H	:	53H
01H	:	4IH	03H	:	54H

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	FIX/ADJ	REMARK
AGC Take Over Point	AGC	0 ~ 63	14 (20)	ADJ	
Vertical Slope	V-LIN	0 ~ 63	32	ADJ	
Vertical Amplitude	V-AMP	0 ~ 63	32	ADJ	
Vertical Shift	V-CENT	0 ~ 63	32 (15)	ADJ	
Horizontal shift	H-CENT	0 ~ 63	32	ADJ	
East-West width	H-SIZE	0 ~ 63	32	FIX	
Horizontal Parallelogram	EW / /	0 ~ 63	32	FIX	
East-west Parabola/Width	PARA	0 ~ 63	32	FIX	
East-west Upper Corner Parabola	COR (U)	0 ~ 63	32	FIX	
East-west Lower Corner Parabola	COR (L)	0 ~ 63	32	FIX	
East-west Trapezium	TRAPE	0 ~ 63	32	FIX	
Horizontal Bow	HB	0 ~ 63	32	FIX	
S-Correction	S-COR	0 ~ 63	0(24)	FIX	
White point Red Standard white temp.	DRI-RS	0 ~ 63	32	FIX	
White point Green Standard white temp.	DRI-GS	0 ~ 63	32	ADJ	
White point Blue Standard white temp	DRI-BS	0 ~ 63	32	ADJ	
White point Red Cold white temp.	DRI-RC	0 ~ 63	25	FIX	
White point Green Cold white temp.	DRI-GC	0 ~ 63	32	ADJ	(DRI-GS)-7 DATA
White point Blue Cold white temp.	DRI-BC	0 ~ 63	32	ADJ	(DRI-BS) DATA
White point Red Warm white temp.	DRI-RW	0 ~ 63	32	FIX	
White point Green Warm white temp.	DRI-GW	0 ~ 63	32	ADJ	(DRI-GS)-7 DATA
White point Blue Warm white temp.	DRI-BW	0 ~ 63	32	ADJ	(DRI-BS)-7 DATA
Max Volume	SUB-VOL	0 ~ 60	60	FIX	
Sub Contrast	SUB-CON	0 ~ 63	63	FIX	
Sub Colour	SUB-COL	0 ~ 63	32 (20)	ADJ	*2
Sub Brightness	SUB-BRI	0 ~ 63	32 (20)	ADJ	
Sub Tint	SUB-TINT	0 ~ 63	32 (30)	ADJ	
Sub Sharpness	SUB-SHP	0 ~ 63	32 (25)	FIX	
Max Hotel Volume	HTL-VOL	0 ~ 60	30	FIX	
Hotel Program number	HTL-PRG	0~99 OR >99 FOR NONE	255	FIX	
Blue Back Contorast	BB-CON	0 ~ 15	10	FIX	
OSD RGB Reference	RGB	0 ~ 15	15(8)	FIX	
Black Level off-set R	CUT-R	0 ~ 63	32	ADJ	
Black Level off-set G	CUT-G	0 ~ 63	32	ADJ	
Cathode Drive Level	CDL	0 ~ 15	0 (9)	FIX	
Y-Delay time for PAL (TV)	DL-PT	0 ~ 15	12	FIX	
Y-Delay time for SECAM (TV)	DL-ST	0 ~ 15	15	FIX	
Y-Delay time for N358 (TV)	DL-3T	0 ~ 15	12(5)	FIX	
Y-Delay time for N443 (TV)	DL-4T	0 ~ 15	12(5)	FIX	
Y-Delay time for B/W (TV)	DL-TV	0 ~ 15	12	FIX	
Y-Delay time for PAL (AV)	DL-PA	0 ~ 15	12	FIX	
Y-Delay time for SECAM (AV)	DL-SA	0 ~ 15	15	FIX	
Y-Delay time for N358 (AV)	DL-3A	0 ~ 15	12(5)	FIX	
Y-Delay time for N443 (AV)	DL-4A	0 ~ 15	12(5)	FIX	
Y-Delay time for B/W (AV)	DL-AV	0 ~ 15	12	FIX	

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	FIX/ADJ	REMARK
COLOUR OFFSET (PAL)	COL-OP	0 ~ 15	8	FIX	
COLOUR OFFSET (SECAM)	COL-OS	0 ~ 15	8	FIX	
COLOUR OFFSET (NTSC358)	COL-O3	0 ~ 15	4	FIX	
COLOUR OFFSET (NTSC443)	COL-O4	0 ~ 15	4	FIX	
SHARPNESS OFFSET(PAL)	SHP-OP	0 ~ 15	8	FIX	
SHARPNESS OFFSET(SECAM)	SHP-OS	0 ~ 15	4	FIX	
SHARPNESS OFFSET(NTSC358)	SHP-O3	0 ~ 15	12	FIX	
SHARPNESS OFFSET(NTSC443)	SHP-O4	0 ~ 15	8	FIX	
Bass Mix for AN7396K	BM-ON	0(DISABLE)/1(ENABLE)	0	FIX	
Bass Mix Effect for AN7396K	BM-EFF	0 ~ 3	2	FIX	
AGC for AN7396 or AN5891	AGC-ON	0(DISABLE)/1(ENABLE)	1	FIX	
AGC Adjust for AN7396K or AN5891	AGC-ADJ	0 ~ 3	3	FIX	
NICAM AGC	AGC-N	0(DISABLE)/1(ENABLE)	0	FIX	
NICAM AGC Gain adjust	GAIN-N	0 ~ 31	0	FIX	
FM Output Level	FM-LV	0 ~ 30	15 (22)	FIX	
IGR Output Level	IGR-LV	0 ~ 30	16 (23)	FIX	
NICAM Output Level (B/G)	BG-NLV	0 ~ 30	13 (26)	FIX	
NICAM Output Level (I)	I-NLV	0 ~ 30	18 (25)	FIX	
NICAM Output Level (D/K)	DK-NLV	0 ~ 30	13 (20)	FIX	
NICAM lower error limit	LOW-ERR	0 ~ 255	35	FIX	
NICAM upper error limit	UP-ERR	0 ~ 255	70	FIX	
IGR Stereo R ch gain adjust(tda9873)	IGR-STR	0 ~ 13	6	FIX	
Vertical Scan Disable	VSD	0 or 1 (not Stored)	0	FIX	
Black Stretch	BKS	0(DISABLE)/1(ENABLE)	1	FIX	
Automatic Volume Leveling	AVL	0(DISABLE)/1(ENABLE)	1	FIX	
Fast Filter IF-PLL	FFI	0(DISABLE)/1(ENABLE)	0	FIX	
Enable Vertical Guard (RGB blanking)	EVG	0(DISABLE)/1(ENABLE)	1	FIX	
EHT Tracking mode [HCO]	EHT	0(DISABLE)/1(ENABLE)	1	FIX	
Overscan Switch Off	OSO	0(DISABLE)/1(ENABLE)	0	FIX	
Auto Colour Limit	ACL	0(DISABLE)/1(ENABLE)	0 (1)	FIX	
Forced Colour ON	FCO	0(DISABLE)/1(ENABLE)	0	FIX	
Sound system M	S-M	0(DISABLE)/1(ENABLE)	*1	FIX	
Sound system DK	S-DK	0(DISABLE)/1(ENABLE)	*1	FIX	
Sound system I	S-I	0(DISABLE)/1(ENABLE)	*1	FIX	
Sound system BG	S-BG	0(DISABLE)/1(ENABLE)	*1	FIX	
Playback SECAM	P-SECAM	0(DISABLE)/1(ENABLE)	*1	FIX	
FE (RF) NTSC 3.58	F-N358	0(DISABLE)/1(ENABLE)	*1	FIX	
FE (RF) NTSC 4.43	F-N443	0(DISABLE)/1(ENABLE)	*1	FIX	
FE (RF) SECAM	F-SECAM	0(DISABLE)/1(ENABLE)	*1	FIX	
Video Mute at Ident loss	VMI	0(DISABLE)/1(ENABLE)	1	FIX	
Video Mute at program/source Change	VMC	0(DISABLE)/1(ENABLE)	1	FIX	
Hotel mode	HTL	0(DISABLE)/1(ENABLE)	0	FIX	
Reduced FM demodulator Gain (for BTSC sig)	BTSC	0(DISABLE)/1(ENABLE)	0	FIX	
Number of external AV sources	AV	0 FOR 1 AV / 1 FOR 2 AV	1	FIX	
FM Window Selection	FMWS	0(DISABLE)/1(ENABLE)	0	FIX	
Sound Mute bit 0	SM0	0(DISABLE)/1(ENABLE)	1	FIX	
Sound Mute bit 1	SM1	0(DISABLE)/1(ENABLE)	0	FIX	
Thai language	THA	0(DISABLE)/1(ENABLE)	0 (1)	FIX	
Arabic language	ARA	0(DISABLE)/1(ENABLE)	1 (0)	FIX	
Malay language	MAL	0(DISABLE)/1(ENABLE)	1 (0)	FIX	
Chinese language	CHI	0(DISABLE)/1(ENABLE)	1 (0)	FIX	
French language	FRE	0(DISABLE)/1(ENABLE)	1 (0)	FIX	
Russian language	RUS	0(DISABLE)/1(ENABLE)	1 (0)	FIX	

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	FIX/ADJ	REMARK
Forced V-SYNC slicing level	FSL	0(DISABLE)/1(ENABLE)	0	FIX	
Sync of OSD	HP2	0 FOR Ph1 / 1 FOR Ph2	0	FIX	
IF AGC speed bit0	AGC0	0(DISABLE)/1(ENABLE)	1	FIX	
IF AGC speed bit1	AGC1	0(DISABLE)/1(ENABLE)	0	FIX	
Phi 1 time constant for FE(RF)	FOA-FE	0(DISABLE)/1(ENABLE)	0	FIX	
Phi 2 time constant for FE(RF)	FOB-FE	0(DISABLE)/1(ENABLE)	0	FIX	
Phi 1 time constant for AV	FOA-AV	0(DISABLE)/1(ENABLE)	1	FIX	
Phi 2 time constant for AV	FOB-AV	0(DISABLE)/1(ENABLE)	1	FIX	
Teletext	TXT	0(DISABLE)/1(ENABLE)	0	FIX	
Teletext Western or Eastern characters	TXT-WE	0(DISABLE)/1(ENABLE)	0	FIX	
Teletext pan-European language	TXT-EURO	0 (teletext pan-european language) / depends on delivery (Arabic/Russian))	0	FIX	
IF frequency selection	IF-38.0	0 (IF FREQUENCY 38.9) / 1 (IF FREQUENCY 38.0)	0	FIX	
Charge pump	CP	0 (FAST TUNING) / 1 (MODERATE SPEED TUNING)	0(1)	FIX	
AN5890 Sound processor present	AN5890	0(DISABLE)/1(ENABLE)	1 (0)	FIX	
AN5891 sound processor present	AN5891	0(DISABLE)/1(ENABLE)	0 (1)	FIX	
AN7396 sound processor present	AN7396	0(DISABLE)/1(ENABLE)	0	FIX	
NICAM decoding enabled	NICAM	0(DISABLE)/1(ENABLE)	*1	FIX	
IGR decoding enabled	IGR	0(DISABLE)/1(ENABLE)	*1	FIX	
GAME mode enabled	GAME	0(DISABLE)/1(ENABLE)	0	FIX	
BIL enabled	BIL	0(DISABLE)/1(ENABLE)	*1	FIX	
LED blink Speed when On-Timer is active	LED-F	0(62.5Hz)/1(1Hz)	0	FIX	
PWM volume table for MONO	MSA	0(original table)/1(new table)	0	FIX	
Output Vertical Guard	NDF	0(ignore)/1(accept)	0(1)	FIX	
OSD "IGR" or "A2" display	A2	0(display IGR)/1(display A2)	*1	FIX	

NOTE :

Please set the EEPROM initial data according to the value in parenthesis () before adjustment.

Fixed data, please do not change without specific instruction.

*1: Please refer the following table.

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	
			21XF50	21XF30
Sound system M	S-M	0(DISABLE)/1(ENABLE)	0(1)	0
Sound system DK	S-DK	0(DISABLE)/1(ENABLE)	1	1(0)
Sound system I	S-I	0(DISABLE)/1(ENABLE)	1	1(0)
Sound system BG	S-BG	0(DISABLE)/1(ENABLE)	1	1
Playback SECAM	P-SECAM	0(DISABLE)/1(ENABLE)	1	1(0)
FE (RF) NTSC 3.58	F-N358	0(DISABLE)/1(ENABLE)	0(1)	0
FE (RF) NTSC 4.43	F-N443	0(DISABLE)/1(ENABLE)	1	1(0)
FE (RF) SECAM	F-SECAM	0(DISABLE)/1(ENABLE)	1	1(0)
NICAM decoding enabled	NICAM	0(DISABLE)/1(ENABLE)	0(1)	0
IGR decoding enabled	IGR	0(DISABLE)/1(ENABLE)	0(1)	0
BIL enabled	BIL	0(DISABLE)/1(ENABLE)	0	0(1)
OSD "IGR" or "A2" display	A2	0(display IGR)/1(display A2)	0(1)	0

*2: After Adjust SUB-COL Level, Add 6 Steps into the value of SUB-COL.
[New SUB-COL = SUB-COL(After Adjust SUB-COL Level)+6]

INITIAL SETTING

In service mode, after execute select POS 1, store the following tuning data in EEPROM.

MCL1			MCL2		
CH-NO	Fv (MHz)	SOUND SYS	CH-NO	Fv (MHz)	SOUND SYS
0			0	590.25	B/G
1	48.25	B/G	1	46.25	B/G
2	62.25	B/G	2	64.25	B/G
3	77.25	D/K	3	86.25	B/G
4	175.25	B/G	4	95.25	B/G
5	182.25	B/G	5	138.25	B/G
6	183.25	D/K	6	175.25	B/G
7	191.25	D/K	7	182.25	B/G
8	196.25	B/G	8	189.25	B/G
9	199.25	M	9	196.25	B/G
10	210.25	B/G	10	209.25	B/G
11	224.25	B/G	11	216.25	B/G
12	471.25	B/G	12		
13	487.25	I	13		
14	503.25	B/G	14		
15	575.25	B/G	15		
16	583.25	B/G	16		
17	599.25	B/G	17		
18	621.25	M	18		
19	639.25	D/K	19		
20	703.25	B/G	20		
21	735.25	I	21		
22	767.25	B/G	22		
23	815.25	B/G	23		
24	855.25	I	24		
25	855.25	B/G	25		
26	55.25	M	26		
27	83.25	M	27		
28	183.25	M	28	527.25	B/G
29	193.25	M	29		
30	217.25	M	30		
31	471.25	M	31		
32	477.25	M	32		
33	693.25	M	33		
34	885.25	M	34		
35	112.25	B/G	35		
36	168.25	B/G	36		
37			37	590.25	B/G
38	294.25	B/G	38		
39	463.25	B/G	39		
40			40		
41	647.25	B/G	41	48.25	B/G
42	663.25	B/G	42	62.25	B/G
43	679.25	B/G	43	77.25	D/K
44	174.95	B/G	44	175.25	B/G
45	175.55	B/G	45	183.25	D/K
			46	191.25	D/K
			47	210.25	B/G
			48	224.25	B/G
			49	487.25	I
			50	503.25	B/G
			51	575.25	B/G
			52	599.25	B/G
			53	621.25	M
			54	639.25	D/K
			55	735.25	I
			56	767.25	B/G
			57	815.25	B/G
			58	855.25	I
			59	91.25	M
			60	183.25	M

MCL2		
CH-NO	Fv (MHz)	SOUND SYS
61	193.25	M
62	217.25	M
63	471.25	M
64	693.25	M
65	112.25	B/G
66	168.25	B/G
67	294.25	B/G
68	463.25	B/G
69	174.95	B/G
70	175.55	B/G

SHIPPING SETTING & CHECKING

THE FOLLOWING DEFAULT DATA HAS BEEN FACTORY-SET FOR THE EEPROM.

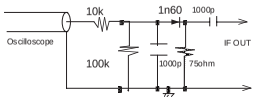
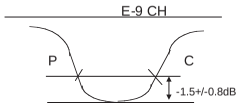
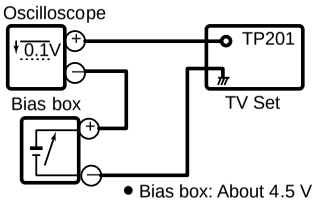
ITEMS	DATA SETTING
LAST PROGRAM/CHANNEL	1
FLASHBACK PROGRAM/CH	1
DIGIT	2
C-SYSTEM	AUTO
S-SYSTEM	B/G
SKIP	OFF
AFC	ON
VOLUME	1
CONTRAST	60 (MAX)
COLOUR	0 (CENTER)
BRIGHTNESS	0 (CENTER)
TINT	0 (CENTER)
SHARPNESS	0 (CENTER)
WHITE TEMP	STANDARD
TREBLE	0 (CENTER)
BASS	0 (CENTER)
SURROUND	OFF
SURROUND LEVEL	0 (CENTER)
BALANCE	0 (CENTER)
REMINDER TIMER	IN-ACTIVE, "—:—"
ON TIMER	IN-ACTIVE, "—:—"
OFF TIMER	IN-ACTIVE, "—:—"
R/C POWER	POWER-ON
LANGUAGE	THAI
BLUE BACK MUTE	ON
HOTEL MODE	OFF
0 CHANNEL SKIP	ON*
LAST TV/AV	TV

FACTORY SETTING BY MODEL
(Reference: Geomagnetism Adjustment)

MODEL	MAGNEIC FIELD(V, H) nT		BACKGROUND	LANG.	S-SYS
21XF30/50	10,000	40,000	12300K	THAI	B/G

* NOTE FOR OSD TYPE ENGLISH/THAILAND

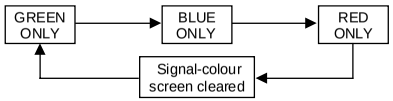
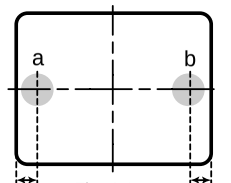
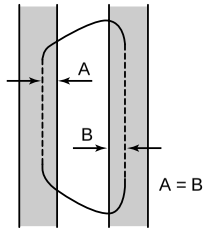
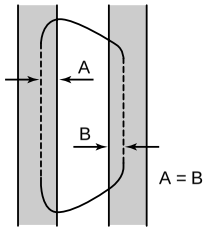
PIF ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**Tuner IFT (PRESET)**	1. Get the tuner ready to receive the CH. E - 9 signal,but with no signal input. Adjust the PLL data. 2. Connect the sweep generator's output cable to the tuner antenna. (RF SWEEP) 3. Adjust the sweep generator's to 80dBμV. 4. Connect the response lead (use LOW IMPEDANCE probe with wave detector ; see Fig.1) to the tuner's IF output terminal. (This terminal must have the probe alone connected). 5. Set the RF AGC to 0 - 6 V with no saturation with the waveform. 6. Adjust the tuner IF coil to obtain the waveform as shown in Fig. 2. **Note: Be sure to keep the tuner cover in position during this adjustment.**	 Fig.1  Fig.2
2	**RF-AGC TAKE OVER POINT ADJUSTMENT (I2C BUS CONTROL)**	1. Receive "PAL COLOUR BAR" signal. ● Signal Strength: 56 ± 1 dBμV (75 ohm open) 2. Connect the oscilloscope to TP201 (Tuner's AGC Terminal) as shown in Fig. 3.  Fig. 3 3. Call "AGC" mode in service mode. Adjust the "AGC" bus data to obtain the Tuner output pin drop 0.1V below maximum voltage. 4. Change the antenna input signal to 63~67dBμV, and make sure there is no noise. 5. Turn up the input signal to 90~95 dBμV to be sure that there is no cross modulation beat.	**Note: For the 50 ohm signal strength gauge, when not using 50/75 impedance adapter, signal strength is 54±1dBμV(75 ohm open), instead of 56±1dBμV (75 ohm open).** **Precaution: The loss of using impedance adapter.**

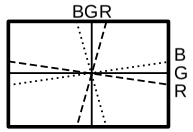
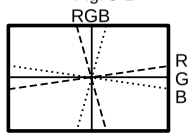
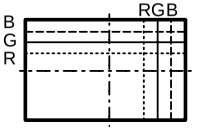
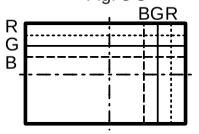
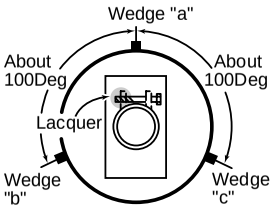
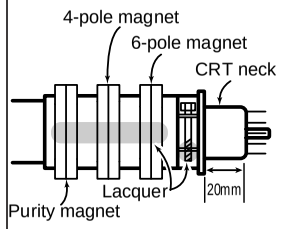
SIF (NICAM/A2) ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**VCO COIL T2300**	1. Recieve "PAL colour bar" signal.(E-69) (Set AFT ON 855.25MHz frequency). 2. Connect DC Voltmeter to TP202 (MAIN BOARD TEST POINT). 3. Check and turn T2300 counter-clockwise (Left) to 0V and then turn it clockwise (Right) until TP202 become 5V. After that, turn T2300 counter-clockwise (Left) until TP202 became 2.5 ± 0.1Vdc. *UNIT BOARD ADJUSTMENT Vcc 5V ± 0.1V IF Input Frequency 38.9MHz ± 0.1V Adjust T2300 unit TP2300(NICAM/A2 BOARD TEST POINT) become 2.5 ± 1.0V Check after assembly NICAM/A2 BOARD Test point: TP202 (IN MAIN BOARD). Preset selected reception frequency (AFT OFF) Check Voltage 2.5V ± 1.0Vdc. **Precaution: The Vcc, fo and other factors are considered in the unit board of the 1.0V tolerance which differ from the adjustment accuracy.**	

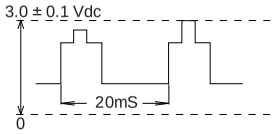
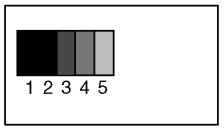
PURITY ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**PURITY ADJ.**	1. Receive the GREEN-ONLY signal. Adjust the beam current to ~700 μA. 2. Degauss the CRT enough with the degausing coil. **Note: Follow the Job Instruction Sheet to adjust the magnetic field.** Vertical Bv: +0.010 mT (0.10 gauss) Horizontal Bh: +0.040 mT (0.40 gauss) (Reference: page E-13) 3. Maintain the purity magnet at the zero magnetic field and keep the static convergence roughly adjusted. 4. Observe the points a, b as shown in Fig. 4-1 through the microscope. Adjust the landing to the A rank requirements. 5. Orient the raster rotation to 0 eastward. 6. Tighten up the deflection coil screws. ● Tightening torque: 108 ± 20 N (11 ± 2 kgf) 7. Make sure the CRT corners landing meet the A rank requirements. If not, stick the magnet sheet to correct it. **Note: This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 700 μA.** **Note: Set the service mode by TP1001 & TP1002 (short) then press factory process R/C RGB key to change to RGB mono colour mode.** * For the following colours press R/C RGB key to change. 	 Fig. 4-1  Fig. 4-2 Rank "A" (on the right of the CRT)  Fig. 4-3 Rank "A" (on the left of the CRT) * Press R/C RGB key for 1 second in NORMAL MODE, the colour will change to RGB mono colour mode. Text Key " R.G.Cy " Key can be directly use to change to other colours screen.

CONVERGENCE ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**CONVERGENC ADJ.** **(To be done after the purity adjustment.**	1. Receive the "Crosshatch Pattern" signal. 2. Using the remote controller, call NORMAL mode. **Static convergence** 1. Turn the 4-pole magnet to a proper opening angle in order to superpose the blue and red colours. 2. Turn the 6-pole magnet to a proper opening angle in order to superpose the green colour over the blue and red colours. **Dynamic convergence** 1. Adjust the convergence on the fringes of the screen in the following steps. a) Fig. 5-1: Drive the wedge at point "a" and swing the deflection coil upward. b) Fig. 5-2: Drive the wedge at points "b" and "c" and swing the deflection coil downward. c) Fig. 5-3: Drive the "c" wedge deeper and swing the deflection coil rightward. **d) Fig. 5-4: Drive the "b" wedge deeper and swing the deflection coil leftward.** 2. Fix all the wedges on the CRT and apply glass tape over them. 3. Apply lacquer to the deflection yoke lock screw, magnet unit (purity, 4-pole, 6-pole magnets) and magnet unit lock screw. Finally received the Red-only and Blue-only signals to make sure there is no other colours on the screen.	 Fig. 5-1  Fig. 5-2  Fig. 5-3  Fig. 5-4  Fig. 5-5  Fig. 5-6

CUT-OFF, BACKGROUND AND SUB-CONTRAST ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**CRT CUTOFF ADJUSTMENT**	1. Switch TV to VIDEO mode,BLUE BACK OFF, without VIDEO signal. 2. Press R/C to set Picture Normal condition. 3. First off the screen by adjust screen variable resistor. *4.Next, check AKB circuit function by slowly increase screen variable resistor until colour raster suddenly On and Off (AKB start function). 5 Then continue adjust until retrace line appear. 6.Finally, slowly decrease the screen variable resistor until screen retrace line (Not Raster) Cut Off. *NOTE: Must comfirm the AKB function in set before continue the next adjustment. **REMARK:** 1). Before CRT Cutoff adjustment, SUB-BRIGHT, DRI-RS/RC/RW, DRI-GS/GC/GW, DRI-BS/BC/BW, CUT-R and CUT-G must be in initial data. 2). CRT Cutoff adjustment must be done inside a dark room.	* Alternative Procedure : (1) Step (1),(2),(3) and (4) are same as beside procedure. (2) Then continue adjust until retrace line appear and make sure the colour appear wheather red, green or blue. (3) Connect the oscilloscope to related test points as below which is based on colour appear at (2). Colour Appear — Test Point RED — TP 851 GREEN — TP 852 BLUE — TP 853 (4) Then adjust SCREEN VR until the tip of signal reach 3Vdc±0.1Vdc.  Fig. 6
2	**SUB-BRIGHTNESS ADJUSTMENT (I2C BUS CONTROL)**	1. Call " SUB-BRI" in service mode. (Receive Crosshatch pattern with 5 black level windows) 2. Adjust the " SUB BRIGHT " bus data in order that the line 1 and 2 have the same darkness wherelse line 3 is one step (data) brighter than line 2. Finally data minus 1 to make line 1,2 and 3 are in same level darkness.	Line 3 is one step (data) brighter than line 2.  Fig. 7 Fig. 8

3	**WHITE BALANCE SERVICE MODE ADJ. (I2C BUS CONTROL)**	1. Receive the "WHITE" pattern with BURST signal. 2. Press R/C to set Picture NORMAL condition. 3. Connect the DC miliammeter between TP602 (-) and TP603 (+). 4. Check Beam current should be around 1,350 μA. 5. Set it to service mode and adjust the " DRI-GS" (White Point-G), "DRI-BS" (White Point-B) data to have a colour temperature of 12,300°K (white). * Note . 6. Receive "WHITE" pattern, with BURST signal, and set Brightness Y by generator, to **10cd/m² Minolta CA-100) by reducing Luminate Y signal. 7. Adjust "CUT-R" & "CUT-G" to get 12,300°K . Then go back normal mode (High Bright)** to check colour temperature. If out of range, back to 1. **Note: This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 700μA).** * Adjust DRI-GC/GW, DRI-BC/BW as following data, after finishing DRI-GS and DRI-BS: DRI-GC/GW DATA = "DRI-GS"-7 DATA DRI-RC = 25; DRI-BC = DRI-BS; DRI-RW = 32 DRI-BW DATA = "DRI-BS"-7 DATA	Refer to Page E13. * 12300°K X : 0.272 Y : 0.275 (MINOLTA COLOUR ANALYZER CA-100) *Note: Above Data can be UP/DOWN by Volume key. Low — High **Note: 10cd/m² — 180cd/m²
4	**Maximum beam check**	1. Receive the "Monoscope Pattern" signal. 2. Press R/C to set Picture NORMAL condition. 3. Connect the DC miliammeter between TP603 (+) and TP602 (–). (Full Scale: 3 mA Range) 4. Beam current must be within 1,350 ± 100 μA.	

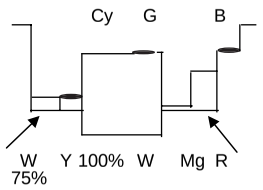
HORIZONTAL AND VERTICAL DEFLECTION LOOP ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**V-LINEARITY (I2C BUS CONTROL)**	1. Receive Monoscope Pattern Signal. 2. Call the "V-LIN" mode. 3. Increase or decrease "V-LIN" by Volume key till the horizontal line in the center of monoscope is just at the position where the blanking starts.	
2	**V-CENTER (I2C BUS CONTROL)**	1. Call the "V-CENT" mode. 2. Increase or decrease "V-CENT" by Volume key till the picture is centered.	
3	**V - AMP (I2C BUS CONTROL)**	1. Call the "V-AMP" mode. 2. Increase or decrease "V - AMP" by Volume key to set overscan of 8.5% typical. Adjustment Spec 8.5% range +1% -1%.	
4	**H-CENTER (I2C BUS CONTROL)**	1. Call the "H-CENT" mode. 2. Increase or decrease "H-CENT" by Volume key to center the picture horizontal.	
5	**S-CORRECTION (I2C BUS CONTROL)**	1. 24 (FIX DATA)	

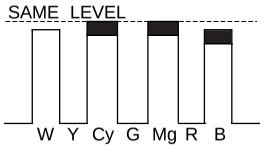
FOCUS ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**Focus**	1. Receive the "Monoscope Pattern" signal. 2. Press R/C to set Picture NORMAL condition. 3. Adjust the focus control to get the best focusing.	

PAL CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**SUB COLOUR (I2C BUS CONTROL)**	1. Receive the "PAL Color Bar" signal. 2. Press R/C to set Picture Normal condition. 3. Connect the oscilloscope to Red cathode. Range : 20 V/Div (AC) (Using 10:1 Probe) Sweep Time : 10 µ sec/Div 4. Using the R/C call "SUB-COL" in SERVICE mode. Adjust SUB COLOUR bus data, so that the 75% White & Red portions of PAL Color Bar be at the same level shown as Fig 10. 5. Add another 6 STEP from the same level in (4). 6. Clear the service mode.	 Fig. 9

NTSC CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**SUB-TINT (I2C BUS CONTROL)**	1. Receive the "NTSC3.58 Colour Bar" signal through AV in. 2. Connect the oscilloscope to TP853 (Pin (5) of P882) BLUE-OUT. • Range : 100mV/Div. (AC)(Use Probe 10:1) • Sweep time : 10 µsec/Div. 3. Call the "SUB-TINT" mode in service mode. Adjust the "SUB-TINT" bus data to obtain the waveform shown as Fig. 11. 4. Clear the SERVICE mode.	 Fig. 10

PROTECTOR OPERATION CHECKING

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**BEAM PROTECTOR**	1. Receive "Monoscope Pattern" signal. 2. Set CONTRAST MAX. 3. Set BRIGHT MAX. 4. During the Collector & Emitter of Q883/5/7 short, make sure the protector ON and switch to standby mode.	* Select one of Q883/5/7 to do each short test.
2	**H, V PROTECTOR**	1. Receive "Monoscope Pattern" signal. 2. Connect output of Bias Box to D607 cathode (R606 side). 3. Set voltage of Bias Box to 18V and make sure the protector is not work. 4. Set voltage of Bias Box to 27V, and make sure the protector is work.	
3	**OTHER PROTECTOR**	1. Once finish rectified Electrolytic Capacitor short testing in +B line, check all possible damaged components on +B line. (Use random selected set for inspection)	

A/V INPUT AND OUTPUT CHECKING

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**VIDEO AND AUDIO OUTPUT CHECK**	1. Receive the "PAL Color Bar" signal (100% White Color Bar, Sound 400 Hz 100% Mod.) 2. Terminate the Video output with a 75 ohm impedance. Make sure the output is as specified (1.0 Vp-p ±3 dB). 3. Terminate the Audio output with a 10k ohm impedance. Make sure the output is as specified (1.76 Vp-p ±3 dB).	
2	**VIDEO AND AUDIO INPUT CHECK**	1. Using the TV/AV key on the remote controller, make sure that the modes change in order of TV, AV1, AV2 & TV again and the video & audio output are according to the input terminal for each mode.	

FUNCTION OPERATION CHECKING (VIDEO AND AUDIO)

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**CONTRAST key**	1. Receive "Monoscope Pattern" signal. 2. Set P-Mode to select CONTRAST. 3. Press Volume Up/Down key to check whether the CONTRAST effect is OK or not.	
2	**COLOUR key**	1. Receive "Color Bar" signal. 2. Set P-Mode to select COLOUR. 3. Press Volume Up/Down key to check whether the COLOUR effect is OK or not.	
3	**BRIGHTNESS key**	1. Receive "Monoscope Pattern" signal. 2. Set P-Mode to select BRIGHTNESS. 3. Press Volume Up/Down key to check whether the BRIGHTNESS effect is OK or not.	
4	**TINT key**	1. Receive the "NTSC Colour Bar" signal thru AV in. 2. Set P-Mode to select TINT. 3. Press Volume Up/Down key to check TINT, UP for GREEN direction and DOWN for PURPLE direction whether is OK or not.	
5	**SHARPNESS Key**	1. Receive "Monoscope Pattern" signal. 2. Set P-mode to select SHARPNESS. 3. Press Volume Up/Down key to check whether the SHARPNESS effect is OK or not.	
6	**CH DISPLAY COLOUR**	1. All Ch (1~99) will have an OSD display of the channel number in green colour under AFT ON condition.	
7	**NORMAL Key**	1. Once in PICTURE Mode, and the NORMAL key is pressed, all the settings will be present to normal setting. (Normal setting value for every mode). • CONTRAST : MAX • COLOUR : CENTER • BRIGHTNESS : CENTER • TINT : CENTER • SHARPNESS : CENTER	**Notes:If nothing is display mean contrast, colour, bright, tint, sharpness are all in normal setting.**
8	**White Temp**	1. Receive "Monoscope Pattern" signal. 2. Set FUNCTION to select WHITE TEMP. 3. Press Volume Up/Down key to check WHITE TEMP Option, STANDARD: NORMAL SETTING, WARM for more REDDISH direction changing, COOL for more BLUISH direction changing.	
9	**TREBLE**	1. Receive "Monoscope Pattern" signal. 2. Set FUNCTION to select TREBLE. 3. Press Volume Up/Down key to check whether the TREBLE effect is OK or not.	
10	**BASS**	1. Receive "Monoscope Pattern" signal. 2. Set FUNCTION to select BASS. 3. Press Volume Up/Down key to check whether the BASS effect is OK or not.	

FUNCTION OPERATION CHECKING (VIDEO AND AUDIO)
(Continued)

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
11	**BALANCE**	1. Receive "Monoscope Pattern" signal. 2. Set FUNCTION to select BALANCE. 3. Press Volume Up/Down key to check whether the Left-to-Right BALANCE effect is OK or not.	
12	**Colour system**	1. Receive the "PAL COLOUR BAR" signal, press the COLOUR SYSTEM key to select modes except PAL, check the COLOUR is not working properly. Then, select the "PAL" mode. Check again its colour so that it is working properly. 2. Receive SECAM COLOUR BAR" signal, press COLOUR SYSTEM key to select modes except SECAM, check the COLOUR is not working properly. Then, select the "SECAM" mode. Check again its colour so that it is working properly. 3. Receive "NTSC 4.43/3.58 COLOUR BAR " signal, press COLOUR SYSTEM key to select modes except N4.43/3.58, check the COLOUR is not working properly .Then, select the "NTSC 4.43/3.58" mode. Check again its colour so that it is working properly.	*NOTE : 21XF30 do not have SECAM Colour System and only receive N4.43/3.58 through AV.
13	**Sound system**	1. Receive "PAL-D/K" signal, press the "SOUND SYSTEM" to select B/G, I. Check the sound output is not working properly. Select D/K and check the sound output to make sure it is working properly. 2. Receive "PAL-I signal, press the "SOUND SYSTEM" to select B/G, D/K. Check the sound output is not working properly. Select I and check the sound output to make sure it is working properly. 3. Receive "PAL-B/G" signal, press the "SOUND SYSTEM" to select I,D/K I. Check the sound output is not working properly. Select B/G and check the sound output to make sure it is working properly. 4. Receive "NTSC-M" signal, press the "SOUND SYSTEM" to select B/G, D/K,I. Check the sound output is not working properly. Select M and check the sound output to make sure it is working properly.	*NOTE : 21XF30 have B/G Sound System Only.
14	NOISE MUTE CHECKING	1. Receive "PAL COLOUR BAR" signal. 2. Turn up the volume control to maximum, make sure the sound is heard from the speakers. Then put the unit in no signal state. 3. Check the sound mute is effective. 4. Finally turn sound level of CTV to minimum.	
15	**OSD LANGUAGE QUANTITY CHECK**	Check OSD LANGUAGE quantity and type for respect model. MODEL | QUANTITY | ENGLISH | THAI 21XF30/50 | 2 | O | O	

HEADPHONE JACK CHECKING

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**HEADPHONE OUTPUT CHECKING**	1. Receive PAL COLOUR PAR with SOUND 400Hz, 100% MODULATION (±50kHz Dev). 2. Maximum volume, and check the headphone output with 400Hz sound and no sound out from speaker.	

MEMORY MAP

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS		CTV FINAL		LAST INITIAL	REMARK
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE/CP1.0	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	
00	PASS WORD								55	00-FF							
01	PASS WORD								41	00-FF							
02	PASS WORD								53	00-FF							
03	PASS WORD								54	00-FF							
04																	
05																	
06			AGC TAKE-OVER						0E	00-3F							
07			V-SLOPE						20	00-3F							
08			V-AMPLITUDE						20	00-3F							
09			V-CENTER						20	00-3F							
0A			H-CENTER						20	00-3F							
0B			H-SIZE						20	00-3F							
0C			EW-PARALLELOGRAM						20	00-3F							
0D			EW-PARABOLA/WIDTH						20	00-3F							
0E			EW-UPPER CORNER						20	00-3F							
0F			EW-LOWER CORNER						20	00-3F							
10			EW-TRAPEZIUM						20	00-3F							
11			HORIZONTAL-BOW						20	00-3F							
12			S-CORRECTION						00	00-3F							
13																	
14																	
15																	
16			DRIVE-R (STANDARD)						20	00-3F							
17			DRIVE-G (STANDARD)						20	00-3F							
18			DRIVE-B (STANDARD)						20	00-3F							
19			DRIVE-R (WARM)						20	00-3F							
1A			DRIVE-G (WARM)						20	00-3F							
1B			DRIVE-B (WARM)						20	00-3F							
1C			DRIVE-R (COOL)						19	00-3F							
1D			DRIVE-G (COOL)						20	00-3F							
1E			DRIVE-B (COOL)						20	00-3F							
1F																	
20																	
21																	
22			SUB-VOLUME						3C	00-3C							
23			SUB-CONTRAST						3F	00-3F							
24			SUB-COLOUR						20	00-3F							
25			SUB-BRIGHTNESS						20	00-3F							
26			SUB-TINT						20	00-3F							
27			SUB-SHARPNESS						20	00-3F							
28			HTL-VOLUME						1E	00-3C							
29	HTL-PROGRAM NUMBER								FF	00-FF							
2A																	
2B																	
2C					BLUE BACK CONTRAST				0A	0-0F							
2D					OSD-REFERENCE				0F	00-0F							
2E			CUTOFF LEVEL -OFFSET R						20	00-3F							
2F			CUTOFF LEVEL -OFFSET G						20	00-3F							
30					CATHODE DRIVE LEVEL				00	00-0F							
31					Y-DELAY (TV PAL)				0C	00-0F							
32					Y-DELAY (TV SECAM)				0F	00-0F							
33					Y-DELAY (TV N358)				0C	00-0F							
34					Y-DELAY (TV N443)				0C	00-0F							
35					Y-DELAY (TV BW)				0C	00-0F							
36					Y-DELAY (AV PAL)				0C	00-0F							
37					Y-DELAY (AV SECAM)				0F	00-0F							
38					Y-DELAY (AV N358)				0C	00-0F							
39					Y-DELAY (AV N443)				0C	00-0F							
3A					Y-DELAY (AV BW)				0C	00-0F							
3B					COLOUR-OFFSET (PAL)				08	00-0F							
3C					COLOUR-OFFSET (SECAM)				08	00-0F							
3D					COLOUR-OFFSET (N358)				04	00-0F							
3E					COLOUR-OFFSET (N443)				04	00-0F							
3F					SHARPNESS-OFFSET (PAL)				08	00-0F							
MODEL									MODEL								
LETTER NO.									LETTER NO.								

MEMORY MAP
(Continued)

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS			CTV FINAL		LAST INITIAL	
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE		CHECK DATA	CHECK TYPE	SETTING DATA	REMARK
40					SHARPNESS-OFFSET (SECAM)				04	00-0F								
41					SHARPNESS-OFFSET (N358)				0C	00-0F								
42					SHARPNESS-OFFSET (N443)				08	00-0F								
43																		
44																		
45																		
46								BM-ON	00	00-01								
47					BM-EFFECT				02	00-0F								
48								AGC-ON	01	00-01								
49					AGC ADJUST				03	00-0F								
4A																		
4B																		
4C								AGC-N	00	00-01								
4D				GAIN-N					00	00-1F								
4E				FM OUTPUT LEVEL					0F	00-1E								
4F				IGR OUTPUT LEVEL					10	00-1E								
50				NICAM OUTPUT LEVEL (B/G)					0D	00-1E								
51				NICAM OUTPUT LEVEL (I)					12	00-1E								
52				NICAM OUTPUT LEVEL (D/K)					0D	00-1E								
53	NICAM LOWER ERROR LIMIT								23	00-FF								
54	NICAM UPPER ERROR LIMIT								46	00-FF								
55					IGR STEREO R CH GAIN ADJ.				06	00-0F								
56																		
57																		
58	OP_FCO	OP_ACL	OP_OSO	OP_EHT	OP_EVG	OP_FFI	OP_AVL	OP_BKS	1B	00-FF								
59	OP_FSECAM	OP_FN443	OP_F358	OP_PSECAM	OP_S_BG	OP_S_I	OP_S_DK	OP_S_M	DE	00-FF								
5A	OP_SM1	OP_SM0	OP_FMWS	OP_AV	OP_BTSC	OP_HTL	OP_VMC	OP_VMI	53	00-FF								
5B	OP_HP2	OP_FSL	OP_RUS	OP_FRE	OP_CHI	OP_MAL	OP_ARA	OP_THA	3E	00-FF								
5C	OP_TXT_WE	OP_TXT	OP_FOB_AV	OP_FOA_AV	OP_FOB_FE	OP_FOA_FE	OP_AGC1	OP_AGC0	31	00-FF								
5D	OP_IGR	OP_NICAM	OP_AN739 6	OP_AN589 1	OP_AN589 0	OP_CP	OP_IF38_0	OP_TXT_EU	08	00-FF								
5E			OP_A2	OP_NDF	OP_MSA	OP_LED_F	OP_BIL	OP_GAME	00	00-3F								
5F																		
60			LAST VOLUME						01	00-3C								
61			LAST BALANCE						1E	00-3C								
62			LAST BASS						1E	00-3C								
63			LAST TREBLE						1E	00-3C								
64								LAST SURR ON/OFF	00	00-02								
65			LAST SURROUND LEVEL						1E	00-3C								
66								LAST SPAT ON/OFF	00	00-02								
67			LAST SPATIALIZER LEVEL						1E	00-3C								
68																		
69			LAST CONTRAST						3C	00-3C								
6A			LAST COLOUR						1E	00-3C								
6B			LAST BRIGHTNESS						1E	00-3C								
6C			LAST TINT						1E	00-3C								
6D			LAST SHARPNESS						1E	00-3C								
6E								LAST WHITE_TEMP	00	00-02								
6F																		
70			LAST BALANCE-G						1E	00-3C								
71			LAST BASS-G						1E	00-3C								
72			LAST TREBLE-G						1E	00-3C								
73								LAST SURR ON/OFF-G	00	00-02								
74			LAST SURROUND LEVEL-G						1E	00-3C								
75								LAST SPAT ON/OFF-G	00	00-02								
76			LAST SPATIALIZER LEVEL-G						1E	00-3C								
77																		
78			LAST CONTRAST-G						3C	00-3C								
79			LAST COLOUR-G						1E	00-3C								
7A			LAST BRIGHTNESS-G						1E	00-3C								
7B			LAST TINT-G						1E	00-3C								
7C			LAST SHARPNESS-G						1E	00-3C								
7D								LAST WHITE_TEMP-G	00	00-02								
7E																		
7F	LAST PROGRAM/SOURCE								01	00-FF								
	MODEL									MODEL								
	LETTER NO.									LETTER NO.								

MEMORY MAP
(Continued)

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS			CTV FINAL		LAST INITIAL	
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE		CHECK DATA	CHECK TYPE	SETTING DATA	REMARK
80	FAVOURITE PROGRAM RED								0A	00-FF								
81	FAVOURITE PROGRAM GREEN								14	00-FF								
82	FAVOURITE PROGRAM YELLOW								1E	00-FF								
83	FAVOURITE PROGRAM CYAN								28	00-FF								
84																		
85																		
86								POWER	01	00-01								
87								B_BACK	00	00-01								
88						LANGUAGE			00	00-06								
89	DIGIT								80	00-01								
8A																		
8B																		
8C	ON TIMER								00	00-4D								
8D	OFF TIMER								00	00-4D								
8E	REMINDER								00	00-4D								
8F	FADE IN VOLUME								FF	00-FF								
90								TMR_FLAG	00	00-01								
91																		
92																		
93	SKIP 0	SKIP 1	SKIP 2	SKIP 3	SKIP 4	SKIP 5	SKIP 6	SKIP 7	80	00-FF								
94	SKIP 8	SKIP 9	SKIP 10	SKIP 11	SKIP 12	SKIP 13	SKIP 14	SKIP 15	00	00-FF								
95	SKIP 16	SKIP 17	SKIP 18	SKIP 19	SKIP 20	SKIP 21	SKIP 22	SKIP 23	00	00-FF								
96	SKIP 24	SKIP 25	SKIP 26	SKIP 27	SKIP 28	SKIP 29	SKIP 30	SKIP 31	00	00-FF								
97	SKIP 32	SKIP 33	SKIP 34	SKIP 35	SKIP 36	SKIP 37	SKIP 38	SKIP 39	00	00-FF								
98	SKIP 40	SKIP 41	SKIP 42	SKIP 43	SKIP 44	SKIP 45	SKIP 46	SKIP 47	00	00-FF								
99	SKIP 48	SKIP 49	SKIP 50	SKIP 51	SKIP 52	SKIP 53	SKIP 54	SKIP 55	00	00-FF								
9A	SKIP 56	SKIP 57	SKIP 58	SKIP 59	SKIP 60	SKIP 61	SKIP 62	SKIP 63	00	00-FF								
9B	SKIP 64	SKIP 65	SKIP 66	SKIP 67	SKIP 68	SKIP 69	SKIP 70	SKIP 71	00	00-FF								
9C	SKIP 72	SKIP 73	SKIP 74	SKIP 75	SKIP 76	SKIP 77	SKIP 78	SKIP 79	00	00-FF								
9D	SKIP 80	SKIP 81	SKIP 82	SKIP 83	SKIP 84	SKIP 85	SKIP 86	SKIP 87	00	00-FF								
9E	SKIP 88	SKIP 89	SKIP 90	SKIP 91	SKIP 92	SKIP 93	SKIP 94	SKIP 95	00	00-FF								
9F	SKIP 96	SKIP 97	SKIP 98	SKIP 99					00	00-FF								
A0																		
A1																		
A2	IGR 0	IGR 1	IGR 2	IGR 3	IGR 4	IGR 5	IGR 6	IGR 7	FF	00-FF								
A3	IGR 8	IGR 9	IGR 10	IGR 11	IGR 12	IGR 13	IGR 14	IGR 15	FF	00-FF								
A4	IGR 16	IGR 17	IGR 18	IGR 19	IGR 20	IGR 21	IGR 22	IGR 23	FF	00-FF								
A5	IGR 24	IGR 25	IGR 26	IGR 27	IGR 28	IGR 29	IGR 30	IGR 31	FF	00-FF								
A6	IGR 32	IGR 33	IGR 34	IGR 35	IGR 36	IGR 37	IGR 38	IGR 39	FF	00-FF								
A7	IGR 40	IGR 41	IGR 42	IGR 43	IGR 44	IGR 45	IGR 46	IGR 47	FF	00-FF								
A8	IGR 48	IGR 49	IGR 50	IGR 51	IGR 52	IGR 53	IGR 54	IGR 55	FF	00-FF								
A9	IGR 56	IGR 57	IGR 58	IGR 59	IGR 60	IGR 61	IGR 62	IGR 63	FF	00-FF								
AA	IGR 64	IGR 65	IGR 66	IGR 67	IGR 68	IGR 69	IGR 70	IGR 71	FF	00-FF								
AB	IGR 72	IGR 73	IGR 74	IGR 75	IGR 76	IGR 77	IGR 78	IGR 79	FF	00-FF								
AC	IGR 80	IGR 81	IGR 82	IGR 83	IGR 84	IGR 85	IGR 86	IGR 87	FF	00-FF								
AD	IGR 88	IGR 89	IGR 90	IGR 91	IGR 92	IGR 93	IGR 94	IGR 95	FF	00-FF								
AE	IGR 96	IGR 97	IGR 98	IGR 99					FF	00-FF								
AF																		
B0																		
B1	NICAM 0	NICAM 1	NICAM 2	NICAM 3	NICAM 4	NICAM 5	NICAM 6	NICAM 7	FF	00-FF								
B2	NICAM 8	NICAM 9	NICAM 10	NICAM 11	NICAM 12	NICAM 13	NICAM 14	NICAM 15	FF	00-FF								
B3	NICAM 16	NICAM 17	NICAM 18	NICAM 19	NICAM 20	NICAM 21	NICAM 22	NICAM 23	FF	00-FF								
B4	NICAM 24	NICAM 25	NICAM 26	NICAM 27	NICAM 28	NICAM 29	NICAM 30	NICAM 31	FF	00-FF								
B5	NICAM 32	NICAM 33	NICAM 34	NICAM 35	NICAM 36	NICAM 37	NICAM 38	NICAM 39	FF	00-FF								
B6	NICAM 40	NICAM 41	NICAM 42	NICAM 43	NICAM 44	NICAM 45	NICAM 46	NICAM 47	FF	00-FF								
B7	NICAM 48	NICAM 49	NICAM 50	NICAM 51	NICAM 52	NICAM 53	NICAM 54	NICAM 55	FF	00-FF								
B8	NICAM 56	NICAM 57	NICAM 58	NICAM 59	NICAM 60	NICAM 61	NICAM 62	NICAM 63	FF	00-FF								
B9	NICAM 64	NICAM 65	NICAM 66	NICAM 67	NICAM 68	NICAM 69	NICAM 70	NICAM 71	FF	00-FF								
BA	NICAM 72	NICAM 73	NICAM 74	NICAM 75	NICAM 76	NICAM 77	NICAM 78	NICAM 79	FF	00-FF								
BB	NICAM 80	NICAM 81	NICAM 82	NICAM 83	NICAM 84	NICAM 85	NICAM 86	NICAM 87	FF	00-FF								
BC	NICAM 88	NICAM 89	NICAM 90	NICAM 91	NICAM 92	NICAM 93	NICAM 94	NICAM 95	FF	00-FF								
BD	NICAM 96	NICAM 97	NICAM 98	NICAM 99					FF	00-FF								
BE																		
BF																		
	MODEL									MODEL								
	LETTER NO.									LETTER NO.								

MEMORY MAP
(Continued)

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS		CTV FINAL		LAST INITIAL	REMARK
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	
C0	IGR_ST 0	IGR_ST 1	IGR_ST 2	IGR_ST 3	IGR_ST 4	IGR_ST 5	IGR_ST 6	IGR_ST 7	FF	00-FF							
C1	IGR_ST 8	IGR_ST 9	IGR_ST 10	IGR_ST 11	IGR_ST 12	IGR_ST 13	IGR_ST 14	IGR_ST 15	FF	00-FF							
C2	IGR_ST 16	IGR_ST 17	IGR_ST 18	IGR_ST 19	IGR_ST 20	IGR_ST 21	IGR_ST 22	IGR_ST 23	FF	00-FF							
C3	IGR_ST 24	IGR_ST 25	IGR_ST 26	IGR_ST 27	IGR_ST 28	IGR_ST 29	IGR_ST 30	IGR_ST 31	FF	00-FF							
C4	IGR_ST 32	IGR_ST 33	IGR_ST 34	IGR_ST 35	IGR_ST 36	IGR_ST 37	IGR_ST 38	IGR_ST 39	FF	00-FF							
C5	IGR_ST 40	IGR_ST 41	IGR_ST 42	IGR_ST 43	IGR_ST 44	IGR_ST 45	IGR_ST 46	IGR_ST 47	FF	00-FF							
C6	IGR_ST 48	IGR_ST 49	IGR_ST 50	IGR_ST 51	IGR_ST 52	IGR_ST 53	IGR_ST 54	IGR_ST 55	FF	00-FF							
C7	IGR_ST 56	IGR_ST 57	IGR_ST 58	IGR_ST 59	IGR_ST 60	IGR_ST 61	IGR_ST 62	IGR_ST 63	FF	00-FF							
C8	IGR_ST 64	IGR_ST 65	IGR_ST 66	IGR_ST 67	IGR_ST 68	IGR_ST 69	IGR_ST 70	IGR_ST 71	FF	00-FF							
C9	IGR_ST 72	IGR_ST 73	IGR_ST 74	IGR_ST 75	IGR_ST 76	IGR_ST 77	IGR_ST 78	IGR_ST 79	FF	00-FF							
CA	IGR_ST 80	IGR_ST 81	IGR_ST 82	IGR_ST 83	IGR_ST 84	IGR_ST 85	IGR_ST 86	IGR_ST 87	FF	00-FF							
CB	IGR_ST 88	IGR_ST 89	IGR_ST 90	IGR_ST 91	IGR_ST 92	IGR_ST 93	IGR_ST 94	IGR_ST 95	FF	00-FF							
CC	IGR_ST 96	IGR_ST 97	IGR_ST 98	IGR_ST 99					FF	00-FF							
CD																	
CE																	
CF	IGR_MA 0	IGR_MA 1	IGR_MA 2	IGR_MA 3	IGR_MA 4	IGR_MA 5	IGR_MA 6	IGR_MA 7	FF	00-FF							
D0	IGR_MA 8	IGR_MA 9	IGR_MA 10	IGR_MA 11	IGR_MA 12	IGR_MA 13	IGR_MA 14	IGR_MA 15	FF	00-FF							
D1	IGR_MA 16	IGR_MA 17	IGR_MA 18	IGR_MA 19	IGR_MA 20	IGR_MA 21	IGR_MA 22	IGR_MA 23	FF	00-FF							
D2	IGR_MA 24	IGR_MA 25	IGR_MA 26	IGR_MA 27	IGR_MA 28	IGR_MA 29	IGR_MA 30	IGR_MA 31	FF	00-FF							
D3	IGR_MA 32	IGR_MA 33	IGR_MA 34	IGR_MA 35	IGR_MA 36	IGR_MA 37	IGR_MA 38	IGR_MA 39	FF	00-FF							
D4	IGR_MA 40	IGR_MA 41	IGR_MA 42	IGR_MA 43	IGR_MA 44	IGR_MA 45	IGR_MA 46	IGR_MA 47	FF	00-FF							
D5	IGR_MA 48	IGR_MA 49	IGR_MA 50	IGR_MA 51	IGR_MA 52	IGR_MA 53	IGR_MA 54	IGR_MA 55	FF	00-FF							
D6	IGR_MA 56	IGR_MA 57	IGR_MA 58	IGR_MA 59	IGR_MA 60	IGR_MA 61	IGR_MA 62	IGR_MA 63	FF	00-FF							
D7	IGR_MA 64	IGR_MA 65	IGR_MA 66	IGR_MA 67	IGR_MA 68	IGR_MA 69	IGR_MA 70	IGR_MA 71	FF	00-FF							
D8	IGR_MA 72	IGR_MA 73	IGR_MA 74	IGR_MA 75	IGR_MA 76	IGR_MA 77	IGR_MA 78	IGR_MA 79	FF	00-FF							
D9	IGR_MA 80	IGR_MA 81	IGR_MA 82	IGR_MA 83	IGR_MA 84	IGR_MA 85	IGR_MA 86	IGR_MA 87	FF	00-FF							
DA	IGR_MA 88	IGR_MA 89	IGR_MA 90	IGR_MA 91	IGR_MA 92	IGR_MA 93	IGR_MA 94	IGR_MA 95	FF	00-FF							
DB	IGR_MA 96	IGR_MA 97	IGR_MA 98	IGR_MA 99					FF	00-FF							
DC																	
DD																	
DE	NIC_ST 0	NIC_ST 1	NIC_ST 2	NIC_ST 3	NIC_ST 4	NIC_ST 5	NIC_ST 6	NIC_ST 7	FF	00-FF							
DF	NIC_ST 8	NIC_ST 9	NIC_ST 10	NIC_ST 11	NIC_ST 12	NIC_ST 13	NIC_ST 14	NIC_ST 15	FF	00-FF							
E0	NIC_ST 16	NIC_ST 17	NIC_ST 18	NIC_ST 19	NIC_ST 20	NIC_ST 21	NIC_ST 22	NIC_ST 23	FF	00-FF							
E1	NIC_ST 24	NIC_ST 25	NIC_ST 26	NIC_ST 27	NIC_ST 28	NIC_ST 29	NIC_ST 30	NIC_ST 31	FF	00-FF							
E2	NIC_ST 32	NIC_ST 33	NIC_ST 34	NIC_ST 35	NIC_ST 36	NIC_ST 37	NIC_ST 38	NIC_ST 39	FF	00-FF							
E3	NIC_ST 40	NIC_ST 41	NIC_ST 42	NIC_ST 43	NIC_ST 44	NIC_ST 45	NIC_ST 46	NIC_ST 47	FF	00-FF							
E4	NIC_ST 48	NIC_ST 49	NIC_ST 50	NIC_ST 51	NIC_ST 52	NIC_ST 53	NIC_ST 54	NIC_ST 55	FF	00-FF							
E5	NIC_ST 56	NIC_ST 57	NIC_ST 58	NIC_ST 59	NIC_ST 60	NIC_ST 61	NIC_ST 62	NIC_ST 63	FF	00-FF							
E6	NIC_ST 64	NIC_ST 65	NIC_ST 66	NIC_ST 67	NIC_ST 68	NIC_ST 69	NIC_ST 70	NIC_ST 71	FF	00-FF							
E7	NIC_ST 72	NIC_ST 73	NIC_ST 74	NIC_ST 75	NIC_ST 76	NIC_ST 77	NIC_ST 78	NIC_ST 79	FF	00-FF							
E8	NIC_ST 80	NIC_ST 81	NIC_ST 82	NIC_ST 83	NIC_ST 84	NIC_ST 85	NIC_ST 86	NIC_ST 87	FF	00-FF							
E9	NIC_ST 88	NIC_ST 89	NIC_ST 90	NIC_ST 91	NIC_ST 92	NIC_ST 93	NIC_ST 94	NIC_ST 95	FF	00-FF							
EA	NIC_ST 96	NIC_ST 97	NIC_ST 98	NIC_ST 99					FF	00-FF							
EB																	
EC																	
ED	NIC_MA 0	NIC_MA 1	NIC_MA 2	NIC_MA 3	NIC_MA 4	NIC_MA 5	NIC_MA 6	NIC_MA 7	FF	00-FF							
EE	NIC_MA 8	NIC_MA 9	NIC_MA 10	NIC_MA 11	NIC_MA 12	NIC_MA 13	NIC_MA 14	NIC_MA 15	FF	00-FF							
EF	NIC_MA 16	NIC_MA 17	NIC_MA 18	NIC_MA 19	NIC_MA 20	NIC_MA 21	NIC_MA 22	NIC_MA 23	FF	00-FF							
F0	NIC_MA 24	NIC_MA 25	NIC_MA 26	NIC_MA 27	NIC_MA 28	NIC_MA 29	NIC_MA 30	NIC_MA 31	FF	00-FF							
F1	NIC_MA 32	NIC_MA 33	NIC_MA 34	NIC_MA 35	NIC_MA 36	NIC_MA 37	NIC_MA 38	NIC_MA 39	FF	00-FF							
F2	NIC_MA 40	NIC_MA 41	NIC_MA 42	NIC_MA 43	NIC_MA 44	NIC_MA 45	NIC_MA 46	NIC_MA 47	FF	00-FF							
F3	NIC_MA 48	NIC_MA 49	NIC_MA 50	NIC_MA 51	NIC_MA 52	NIC_MA 53	NIC_MA 54	NIC_MA 55	FF	00-FF							
F4	NIC_MA 56	NIC_MA 57	NIC_MA 58	NIC_MA 59	NIC_MA 60	NIC_MA 61	NIC_MA 62	NIC_MA 63	FF	00-FF							
F5	NIC_MA 64	NIC_MA 65	NIC_MA 66	NIC_MA 67	NIC_MA 68	NIC_MA 69	NIC_MA 70	NIC_MA 71	FF	00-FF							
F6	NIC_MA 72	NIC_MA 73	NIC_MA 74	NIC_MA 75	NIC_MA 76	NIC_MA 77	NIC_MA 78	NIC_MA 79	FF	00-FF							
F7	NIC_MA 80	NIC_MA 81	NIC_MA 82	NIC_MA 83	NIC_MA 84	NIC_MA 85	NIC_MA 86	NIC_MA 87	FF	00-FF							
F8	NIC_MA 88	NIC_MA 89	NIC_MA 90	NIC_MA 91	NIC_MA 92	NIC_MA 93	NIC_MA 94	NIC_MA 95	FF	00-FF							
F9	NIC_MA 96	NIC_MA 97	NIC_MA 98	NIC_MA 99					FF	00-FF							
FA																	
FB																	
FC	NIC_3D 0	NIC_3D 1	NIC_3D 2	NIC_3D 3	NIC_3D 4	NIC_3D 5	NIC_3D 6	NIC_3D 7	00	00-FF							
FD	NIC_3D 8	NIC_3D 9	NIC_3D 10	NIC_3D 11	NIC_3D 12	NIC_3D 13	NIC_3D 14	NIC_3D 15	00	00-FF							
FE	NIC_3D 16	NIC_3D 17	NIC_3D 18	NIC_3D 19	NIC_3D 20	NIC_3D 21	NIC_3D 22	NIC_3D 23	00	00-FF							
FF	NIC_3D 24	NIC_3D 25	NIC_3D 26	NIC_3D 27	NIC_3D 28	NIC_3D 29	NIC_3D 30	NIC_3D 31	00	00-FF							
	MODEL									MODEL							
	LETTER NO.									LETTER NO.							

MEMORY MAP
(Continued)

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS		CTV FINAL		LAST INITIAL	REMARK
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	
100	NIC_3D 32	NIC_3D 33	NIC_3D 34	NIC_3D 35	NIC_3D 36	NIC_3D 37	NIC_3D 38	NIC_3D 39	00	00-FF							
101	NIC_3D 40	NIC_3D 41	NIC_3D 42	NIC_3D 43	NIC_3D 44	NIC_3D 45	NIC_3D 46	NIC_3D 47	00	00-FF							
102	NIC_3D 48	NIC_3D 49	NIC_3D 50	NIC_3D 51	NIC_3D 52	NIC_3D 53	NIC_3D 54	NIC_3D 55	00	00-FF							
103	NIC_3D 56	NIC_3D 57	NIC_3D 58	NIC_3D 59	NIC_3D 60	NIC_3D 61	NIC_3D 62	NIC_3D 63	00	00-FF							
104	NIC_3D 64	NIC_3D 65	NIC_3D 66	NIC_3D 67	NIC_3D 68	NIC_3D 69	NIC_3D 70	NIC_3D 71	00	00-FF							
105	NIC_3D 72	NIC_3D 73	NIC_3D 74	NIC_3D 75	NIC_3D 76	NIC_3D 77	NIC_3D 78	NIC_3D 79	00	00-FF							
106	NIC_3D 80	NIC_3D 81	NIC_3D 82	NIC_3D 83	NIC_3D 84	NIC_3D 85	NIC_3D 86	NIC_3D 87	00	00-FF							
107	NIC_3D 88	NIC_3D 89	NIC_3D 90	NIC_3D 91	NIC_3D 92	NIC_3D 93	NIC_3D 94	NIC_3D 95	00	00-FF							
108	NIC_3D 96	NIC_3D 97	NIC_3D 98	NIC_3D 99					00	00-FF							
109																	
10A																	
10B	NIC_MO 0	NIC_MO 1	NIC_MO 2	NIC_MO 3	NIC_MO 4	NIC_MO 5	NIC_MO 6	NIC_MO 7	FF	00-FF							
10C	NIC_MO 8	NIC_MO 9	NIC_MO 10	NIC_MO 11	NIC_MO 12	NIC_MO 13	NIC_MO 14	NIC_MO 15	FF	00-FF							
10D	NIC_MO 16	NIC_MO 17	NIC_MO 18	NIC_MO 19	NIC_MO 20	NIC_MO 21	NIC_MO 22	NIC_MO 23	FF	00-FF							
10E	NIC_MO 24	NIC_MO 25	NIC_MO 26	NIC_MO 27	NIC_MO 28	NIC_MO 29	NIC_MO 30	NIC_MO 31	FF	00-FF							
10F	NIC_MO 32	NIC_MO 33	NIC_MO 34	NIC_MO 35	NIC_MO 36	NIC_MO 37	NIC_MO 38	NIC_MO 39	FF	00-FF							
110	NIC_MO 40	NIC_MO 41	NIC_MO 42	NIC_MO 43	NIC_MO 44	NIC_MO 45	NIC_MO 46	NIC_MO 47	FF	00-FF							
111	NIC_MO 48	NIC_MO 49	NIC_MO 50	NIC_MO 51	NIC_MO 52	NIC_MO 53	NIC_MO 54	NIC_MO 55	FF	00-FF							
112	NIC_MO 56	NIC_MO 57	NIC_MO 58	NIC_MO 59	NIC_MO 60	NIC_MO 61	NIC_MO 62	NIC_MO 63	FF	00-FF							
113	NIC_MO 64	NIC_MO 65	NIC_MO 66	NIC_MO 67	NIC_MO 68	NIC_MO 69	NIC_MO 70	NIC_MO 71	FF	00-FF							
114	NIC_MO 72	NIC_MO 73	NIC_MO 74	NIC_MO 75	NIC_MO 76	NIC_MO 77	NIC_MO 78	NIC_MO 79	FF	00-FF							
115	NIC_MO 80	NIC_MO 81	NIC_MO 82	NIC_MO 83	NIC_MO 84	NIC_MO 85	NIC_MO 86	NIC_MO 87	FF	00-FF							
116	NIC_MO 88	NIC_MO 89	NIC_MO 90	NIC_MO 91	NIC_MO 92	NIC_MO 93	NIC_MO 94	NIC_MO 95	FF	00-FF							
117	NIC_MO 96	NIC_MO 97	NIC_MO 98	NIC_MO 99					FF	00-FF							
118																	
119																	
11A	TUNING FREQUANCY (HIGHER PART)										S-SYS						POS 0
11B	TUNING FREQUANCY (LOWER PART)										000:BG						
11C	S-SYS			AFT		(auto)		C-SYS	10		001:I						
11D	TUNING FREQUANCY (HIGHER PART)										O1O:DK						POS 1
11E	TUNING FREQUANCY (LOWER PART)										011:M						
11F	S-SYS			AFT		(auto)		C-SYS	10								
120	TUNING FREQUANCY (HIGHER PART)										AFT						POS 2
121	TUNING FREQUANCY (LOWER PART)										0:OFF						
122	S-SYS			AFT		(auto)		C-SYS	10		1:ON						
123	TUNING FREQUANCY (HIGHER PART)																POS 3
124	TUNING FREQUANCY (LOWER PART)																
125	S-SYS			AFT		(auto)		C-SYS	10								
126	TUNING FREQUANCY (HIGHER PART)																POS 4
127	TUNING FREQUANCY (LOWER PART)																
128	S-SYS			AFT		(auto)		C-SYS	10								
129	TUNING FREQUANCY (HIGHER PART)																POS 5
12A	TUNING FREQUANCY (LOWER PART)																
12B	S-SYS			AFT		(auto)		C-SYS	10								
12C	TUNING FREQUANCY (HIGHER PART)																POS 6
12D	TUNING FREQUANCY (LOWER PART)																
12E	S-SYS			AFT		(auto)		C-SYS	10								
12F	TUNING FREQUANCY (HIGHER PART)																POS 7
130	TUNING FREQUANCY (LOWER PART)																
131	S-SYS			AFT		(auto)		C-SYS	10								
132	TUNING FREQUANCY (HIGHER PART)																POS 8
133	TUNING FREQUANCY (LOWER PART)																
134	S-SYS			AFT		(auto)		C-SYS	10								
135	TUNING FREQUANCY (HIGHER PART)																POS 9
136	TUNING FREQUANCY (LOWER PART)																
137	S-SYS			AFT		(auto)		C-SYS	10								
138	TUNING FREQUANCY (HIGHER PART)																POS 10
139	TUNING FREQUANCY (LOWER PART)																
13A	S-SYS			AFT		(auto)		C-SYS	10								
13B	TUNING FREQUANCY (HIGHER PART)																POS 11
13C	TUNING FREQUANCY (LOWER PART)																
13D	S-SYS			AFT		(auto)		C-SYS	10								
13E	TUNING FREQUANCY (HIGHER PART)																POS 12
13F	TUNING FREQUANCY (LOWER PART)																
	MODEL									MODEL							
	LETTER NO.									LETTER NO.							

MEMORY MAP
(Continued)

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS		CTV FINAL		LAST INITIAL	
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE/CPU	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	REMARK
140	S-SYS			AFT	(auto)		C-SYS		10								
141	TUNING FREQUANCY (HIGHER PART)																POS 13
142	TUNING FREQUANCY (LOWER PART)																
143	S-SYS			AFT	(auto)		C-SYS		10								
144	TUNING FREQUANCY (HIGHER PART)																POS 14
145	TUNING FREQUANCY (LOWER PART)																
146	S-SYS			AFT	(auto)		C-SYS		10								
147	TUNING FREQUANCY (HIGHER PART)																POS 15
148	TUNING FREQUANCY (LOWER PART)																
149	S-SYS			AFT	(auto)		C-SYS		10								
14A	TUNING FREQUANCY (HIGHER PART)																POS 16
14B	TUNING FREQUANCY (LOWER PART)																
14C	S-SYS			AFT	(auto)		C-SYS		10								
14D	TUNING FREQUANCY (HIGHER PART)																POS 17
14E	TUNING FREQUANCY (LOWER PART)																
14F	S-SYS			AFT	(auto)		C-SYS		10								
150	TUNING FREQUANCY (HIGHER PART)																POS 18
151	TUNING FREQUANCY (LOWER PART)																
152	S-SYS			AFT	(auto)		C-SYS		10								
153	TUNING FREQUANCY (HIGHER PART)																POS 19
154	TUNING FREQUANCY (LOWER PART)																
155	S-SYS			AFT	(auto)		C-SYS		10								
156	TUNING FREQUANCY (HIGHER PART)																POS 20
157	TUNING FREQUANCY (LOWER PART)																
158	S-SYS			AFT	(auto)		C-SYS		10								
159	TUNING FREQUANCY (HIGHER PART)																POS 21
15A	TUNING FREQUANCY (LOWER PART)																
15B	S-SYS			AFT	(auto)		C-SYS		10								
15C	TUNING FREQUANCY (HIGHER PART)																POS 22
15D	TUNING FREQUANCY (LOWER PART)																
15E	S-SYS			AFT	(auto)		C-SYS		10								
15F	TUNING FREQUANCY (HIGHER PART)																POS 23
160	TUNING FREQUANCY (LOWER PART)																
161	S-SYS			AFT	(auto)		C-SYS		10								
162	TUNING FREQUANCY (HIGHER PART)																POS 24
163	TUNING FREQUANCY (LOWER PART)																
164	S-SYS			AFT	(auto)		C-SYS		10								
165	TUNING FREQUANCY (HIGHER PART)																POS 25
166	TUNING FREQUANCY (LOWER PART)																
167	S-SYS			AFT	(auto)		C-SYS		10								
168	TUNING FREQUANCY (HIGHER PART)																POS 26
169	TUNING FREQUANCY (LOWER PART)																
16A	S-SYS			AFT	(auto)		C-SYS		10								
16B	TUNING FREQUANCY (HIGHER PART)																POS 27
16C	TUNING FREQUANCY (LOWER PART)																
16D	S-SYS			AFT	(auto)		C-SYS		10								
16E	TUNING FREQUANCY (HIGHER PART)																POS 28
16F	TUNING FREQUANCY (LOWER PART)																
170	S-SYS			AFT	(auto)		C-SYS		10								
171	TUNING FREQUANCY (HIGHER PART)																POS 29
172	TUNING FREQUANCY (LOWER PART)																
173	S-SYS			AFT	(auto)		C-SYS		10								
174	TUNING FREQUANCY (HIGHER PART)																POS 30
175	TUNING FREQUANCY (LOWER PART)																
176	S-SYS			AFT	(auto)		C-SYS		10								
177	TUNING FREQUANCY (HIGHER PART)																POS 31
178	TUNING FREQUANCY (LOWER PART)																
179	S-SYS			AFT	(auto)		C-SYS		10								
17A	TUNING FREQUANCY (HIGHER PART)																POS 32
17B	TUNING FREQUANCY (LOWER PART)																
17C	S-SYS			AFT	(auto)		C-SYS		10								
17D	TUNING FREQUANCY (HIGHER PART)																POS 33
17E	TUNING FREQUANCY (LOWER PART)																
17F	S-SYS			AFT	(auto)		C-SYS		10								
MODEL									MODEL								
LETTER NO.									LETTER NO.								

MEMORY MAP
(Continued)

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS		CTV FINAL		LAST INITIAL	
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	REMARK
180	TUNING FREQUANCY (HIGHER PART)																POS 34
181	TUNING FREQUANCY (LOWER PART)																
182	S-SYS			AFT	(auto)		C-SYS		10								
183	TUNING FREQUANCY (HIGHER PART)																POS 35
184	TUNING FREQUANCY (LOWER PART)																
185	S-SYS			AFT	(auto)		C-SYS		10								
186	TUNING FREQUANCY (HIGHER PART)																POS 36
187	TUNING FREQUANCY (LOWER PART)																
188	S-SYS			AFT	(auto)		C-SYS		10								
189	TUNING FREQUANCY (HIGHER PART)																POS 37
18A	TUNING FREQUANCY (LOWER PART)																
18B	S-SYS			AFT	(auto)		C-SYS		10								
18C	TUNING FREQUANCY (HIGHER PART)																POS 38
18D	TUNING FREQUANCY (LOWER PART)																
18E	S-SYS			AFT	(auto)		C-SYS		10								
18F	TUNING FREQUANCY (HIGHER PART)																POS 39
190	TUNING FREQUANCY (LOWER PART)																
191	S-SYS			AFT	(auto)		C-SYS		10								
192	TUNING FREQUANCY (HIGHER PART)																POS 40
193	TUNING FREQUANCY (LOWER PART)																
194	S-SYS			AFT	(auto)		C-SYS		10								
195	TUNING FREQUANCY (HIGHER PART)																POS 41
196	TUNING FREQUANCY (LOWER PART)																
197	S-SYS			AFT	(auto)		C-SYS		10								
198	TUNING FREQUANCY (HIGHER PART)																POS 42
199	TUNING FREQUANCY (LOWER PART)																
19A	S-SYS			AFT	(auto)		C-SYS		10								
19B	TUNING FREQUANCY (HIGHER PART)																POS 43
19C	TUNING FREQUANCY (LOWER PART)																
19D	S-SYS			AFT	(auto)		C-SYS		10								
19E	TUNING FREQUANCY (HIGHER PART)																POS 44
19F	TUNING FREQUANCY (LOWER PART)																
1A0	S-SYS			AFT	(auto)		C-SYS		10								
1A1	TUNING FREQUANCY (HIGHER PART)																POS 45
1A2	TUNING FREQUANCY (LOWER PART)																
1A3	S-SYS			AFT	(auto)		C-SYS		10								
1A4	TUNING FREQUANCY (HIGHER PART)																POS 46
1A5	TUNING FREQUANCY (LOWER PART)																
1A6	S-SYS			AFT	(auto)		C-SYS		10								
1A7	TUNING FREQUANCY (HIGHER PART)																POS 47
1A8	TUNING FREQUANCY (LOWER PART)																
1A9	S-SYS			AFT	(auto)		C-SYS		10								
1AA	TUNING FREQUANCY (HIGHER PART)																POS 48
1AB	TUNING FREQUANCY (LOWER PART)																
1AC	S-SYS			AFT	(auto)		C-SYS		10								
1AD	TUNING FREQUANCY (HIGHER PART)																POS 49
1AE	TUNING FREQUANCY (LOWER PART)																
1AF	S-SYS			AFT	(auto)		C-SYS		10								
1B0	TUNING FREQUANCY (HIGHER PART)																POS 50
1B1	TUNING FREQUANCY (LOWER PART)																
1B2	S-SYS			AFT	(auto)		C-SYS		10								
1B3	TUNING FREQUANCY (HIGHER PART)																POS 51
1B4	TUNING FREQUANCY (LOWER PART)																
1B5	S-SYS			AFT	(auto)		C-SYS		10								
1B6	TUNING FREQUANCY (HIGHER PART)																POS 52
1B7	TUNING FREQUANCY (LOWER PART)																
1B8	S-SYS			AFT	(auto)		C-SYS		10								
1B9	TUNING FREQUANCY (HIGHER PART)																POS 53
1BA	TUNING FREQUANCY (LOWER PART)																
1BB	S-SYS			AFT	(auto)		C-SYS		10								
1BC	TUNING FREQUANCY (HIGHER PART)																POS 54
1BD	TUNING FREQUANCY (LOWER PART)																
1BE	S-SYS			AFT	(auto)		C-SYS		10								
1BF	TUNING FREQUANCY (HIGHER PART)																POS 55
MODEL									MODEL								
LETTER NO.									LETTER NO.								

MEMORY MAP
(Continued)

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS		CTV FINAL		LAST INITIAL	REMARK
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	
1C0	TUNING FREQUANCY (LOWER PART)																POS 55
1C1	S-SYS			AFT		(auto)	C-SYS		10								
1C2	TUNING FREQUANCY (HIGHER PART)																POS 56
1C3	TUNING FREQUANCY (LOWER PART)																
1C4	S-SYS			AFT		(auto)	C-SYS		10								
1C5	TUNING FREQUANCY (HIGHER PART)																POS 57
1C6	TUNING FREQUANCY (LOWER PART)																
1C7	S-SYS			AFT		(auto)	C-SYS		10								
1C8	TUNING FREQUANCY (HIGHER PART)																POS 58
1C9	TUNING FREQUANCY (LOWER PART)																
1CA	S-SYS			AFT		(auto)	C-SYS		10								
1CB	TUNING FREQUANCY (HIGHER PART)																POS 59
1CC	TUNING FREQUANCY (LOWER PART)																
1CD	S-SYS			AFT		(auto)	C-SYS		10								
1CE	TUNING FREQUANCY (HIGHER PART)																POS 60
1CF	TUNING FREQUANCY (LOWER PART)																
1D0	S-SYS			AFT		(auto)	C-SYS		10								
1D1	TUNING FREQUANCY (HIGHER PART)																POS 61
1D2	TUNING FREQUANCY (LOWER PART)																
1D3	S-SYS			AFT		(auto)	C-SYS		10								
1D4	TUNING FREQUANCY (HIGHER PART)																POS 62
1D5	TUNING FREQUANCY (LOWER PART)																
1D6	S-SYS			AFT		(auto)	C-SYS		10								
1D7	TUNING FREQUANCY (HIGHER PART)																POS 63
1D8	TUNING FREQUANCY (LOWER PART)																
1D9	S-SYS			AFT		(auto)	C-SYS		10								
1DA	TUNING FREQUANCY (HIGHER PART)																POS 64
1DB	TUNING FREQUANCY (LOWER PART)																
1DC	S-SYS			AFT		(auto)	C-SYS		10								
1DD	TUNING FREQUANCY (HIGHER PART)																POS 65
1DE	TUNING FREQUANCY (LOWER PART)																
1DF	S-SYS			AFT		(auto)	C-SYS		10								
1E0	TUNING FREQUANCY (HIGHER PART)																POS 66
1E1	TUNING FREQUANCY (LOWER PART)																
1E2	S-SYS			AFT		(auto)	C-SYS		10								
1E3	TUNING FREQUANCY (HIGHER PART)																POS 67
1E4	TUNING FREQUANCY (LOWER PART)																
1E5	S-SYS			AFT		(auto)	C-SYS		10								
1E6	TUNING FREQUANCY (HIGHER PART)																POS 68
1E7	TUNING FREQUANCY (LOWER PART)																
1E8	S-SYS			AFT		(auto)	C-SYS		10								
1E9	TUNING FREQUANCY (HIGHER PART)																POS 69
1EA	TUNING FREQUANCY (LOWER PART)																
1EB	S-SYS			AFT		(auto)	C-SYS		10								
1EC	TUNING FREQUANCY (HIGHER PART)																POS 70
1ED	TUNING FREQUANCY (LOWER PART)																
1EE	S-SYS			AFT		(auto)	C-SYS		10								
1EF	TUNING FREQUANCY (HIGHER PART)																POS 71
1F0	TUNING FREQUANCY (LOWER PART)																
1F1	S-SYS			AFT		(auto)	C-SYS		10								
1F2	TUNING FREQUANCY (HIGHER PART)																POS 72
1F3	TUNING FREQUANCY (LOWER PART)																
1F4	S-SYS			AFT		(auto)	C-SYS		10								
1F5	TUNING FREQUANCY (HIGHER PART)																POS 73
1F6	TUNING FREQUANCY (LOWER PART)																
1F7	S-SYS			AFT		(auto)	C-SYS		10								
1F8	TUNING FREQUANCY (HIGHER PART)																POS 74
1F9	TUNING FREQUANCY (LOWER PART)																
1FA	S-SYS			AFT		(auto)	C-SYS		10								
1FB	TUNING FREQUANCY (HIGHER PART)																POS 75
1FC	TUNING FREQUANCY (LOWER PART)																
1FD	S-SYS			AFT		(auto)	C-SYS		10								
1FE	TUNING FREQUANCY (HIGHER PART)																POS 76
1FF	TUNING FREQUANCY (LOWER PART)																
MODEL									MODEL								
LETTER NO.									LETTER NO.								

MEMORY MAP
(Continued)

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS		CTV FINAL		LAST INITIAL	REMARK
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	
200	S-SYS			AFT		(auto)	C-SYS		10								
201	TUNING FREQUANCY (HIGHER PART)																POS 77
202	TUNING FREQUANCY (LOWER PART)																
203	S-SYS			AFT		(auto)	C-SYS		10								
204	TUNING FREQUANCY (HIGHER PART)																POS 78
205	TUNING FREQUANCY (LOWER PART)																
206	S-SYS			AFT		(auto)	C-SYS		10								
207	TUNING FREQUANCY (HIGHER PART)																POS 79
208	TUNING FREQUANCY (LOWER PART)																
209	S-SYS			AFT		(auto)	C-SYS		10								
20A	TUNING FREQUANCY (HIGHER PART)																POS 80
20B	TUNING FREQUANCY (LOWER PART)																
20C	S-SYS			AFT		(auto)	C-SYS		10								
20D	TUNING FREQUANCY (HIGHER PART)																POS 81
20E	TUNING FREQUANCY (LOWER PART)																
20F	S-SYS			AFT		(auto)	C-SYS		10								
210	TUNING FREQUANCY (HIGHER PART)																POS 82
211	TUNING FREQUANCY (LOWER PART)																
212	S-SYS			AFT		(auto)	C-SYS		10								
213	TUNING FREQUANCY (HIGHER PART)																POS 83
214	TUNING FREQUANCY (LOWER PART)																
215	S-SYS			AFT		(auto)	C-SYS		10								
216	TUNING FREQUANCY (HIGHER PART)																POS 84
217	TUNING FREQUANCY (LOWER PART)																
218	S-SYS			AFT		(auto)	C-SYS		10								
219	TUNING FREQUANCY (HIGHER PART)																POS 85
21A	TUNING FREQUANCY (LOWER PART)																
21B	S-SYS			AFT		(auto)	C-SYS		10								
21C	TUNING FREQUANCY (HIGHER PART)																POS 86
21D	TUNING FREQUANCY (LOWER PART)																
21E	S-SYS			AFT		(auto)	C-SYS		10								
21F	TUNING FREQUANCY (HIGHER PART)																POS 87
220	TUNING FREQUANCY (LOWER PART)																
221	S-SYS			AFT		(auto)	C-SYS		10								
222	TUNING FREQUANCY (HIGHER PART)																POS 88
223	TUNING FREQUANCY (LOWER PART)																
224	S-SYS			AFT		(auto)	C-SYS		10								
225	TUNING FREQUANCY (HIGHER PART)																POS 89
226	TUNING FREQUANCY (LOWER PART)																
227	S-SYS			AFT		(auto)	C-SYS		10								
228	TUNING FREQUANCY (HIGHER PART)																POS 90
229	TUNING FREQUANCY (LOWER PART)																
22A	S-SYS			AFT		(auto)	C-SYS		10								
22B	TUNING FREQUANCY (HIGHER PART)																POS 91
22C	TUNING FREQUANCY (LOWER PART)																
22D	S-SYS			AFT		(auto)	C-SYS		10								
22E	TUNING FREQUANCY (HIGHER PART)																POS 92
22F	TUNING FREQUANCY (LOWER PART)																
230	S-SYS			AFT		(auto)	C-SYS		10								
231	TUNING FREQUANCY (HIGHER PART)																POS 93
232	TUNING FREQUANCY (LOWER PART)																
233	S-SYS			AFT		(auto)	C-SYS		10								
234	TUNING FREQUANCY (HIGHER PART)																POS 94
235	TUNING FREQUANCY (LOWER PART)																
236	S-SYS			AFT		(auto)	C-SYS		10								
237	TUNING FREQUANCY (HIGHER PART)																POS 95
238	TUNING FREQUANCY (LOWER PART)																
239	S-SYS			AFT		(auto)	C-SYS		10								
23A	TUNING FREQUANCY (HIGHER PART)																POS 96
23B	TUNING FREQUANCY (LOWER PART)																
23C	S-SYS			AFT		(auto)	C-SYS		10								
23D	TUNING FREQUANCY (HIGHER PART)																POS 97
23E	TUNING FREQUANCY (LOWER PART)																
23F	S-SYS			AFT		(auto)	C-SYS		10								
MODEL									MODEL								
LETTER NO.									LETTER NO.								

MEMORY MAP
(Continued)

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS		CTV FINAL		LAST INITIAL	
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	REMARK
240	TUNING FREQUANCY (HIGHER PART)																POS 98
241	TUNING FREQUANCY (LOWER PART)																
242	S-SYS			AFT		(auto)	C-SYS		10								
243	TUNING FREQUANCY (HIGHER PART)																POS 99
244	TUNING FREQUANCY (LOWER PART)																
245	S-SYS			AFT		(auto)	C-SYS		10								
246																	AV1
247																	
248						(auto)	C-SYS		10								
249																	AV2
24A																	
24B						(auto)	C-SYS		10								
24C																	GAME
24D																	
24E						(auto)	C-SYS		10								
24F																	
250																	
251			DEFAULT BALANCE-G						1E	00-3C							
252			DEFAULT BASS-G						1E	00-3C							
253			DEFAULT TREBLE-G						1E	00-3C							
254							DEFAULT SURR ON-G		00	00-02							
255			DEFAULT SURROUND LEVEL-G						1E	00-3C							
256							DEFAULT SPAT ON-G		00	00-02							
257			DEFAULT SPATIALIZER LEVEL-G						1E	00-3C							
258																	
259			DEFAULT CONTRAST-G						3C	00-3C							
25A			DEFAULT COLOUR-G						1E	00-3C							
25B			DEFAULT BRIGHTNESS-G						1E	00-3C							
25C			DEFAULT TINT-G						1E	00-3C							
25D			DEFAULT SHARPNESS-G						1E	00-3C							
25E			DEFAULT WHITE TEMP-G						00	00-02							
25F																	
260																	
261																	
262																	
263																	
264																	
265																	
266																	
267																	
268																	
269																	
26A																	
26B																	
26C																	
26D																	
26E																	
26F																	
270																	
271																	
272																	
273																	
274																	
275																	
276																	
277																	
278																	
279																	
27A																	
27B																	
27C																	
27D																	
27E																	
27F																	
MODEL									MODEL								
LETTER NO.									LETTER NO.								

MEMORY MAP
(Continued)

ADDRESS	DATA								MICON	EEPROM	EEPROM	CHASSIS		CTV FINAL		LAST INITIAL	
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	REMARK
280																	
281																	
282																	
283																	
284																	
285																	
286																	
287																	
288																	
289																	
28A																	
28B																	
28C																	
28D																	
28E																	
28F																	
290																	
291																	
292																	
293																	
294																	
295																	
296																	
297																	
298																	
299																	
29A																	
29B																	
29C																	
29D																	
29E																	
29F																	
2A0																	
2A1																	
2A2																	
2A3																	
2A4																	
2A5																	
2A6																	
2A7																	
2A8																	
2A9																	
2AA																	
2AB																	
2AC																	
2AD																	
2AE																	
2AF																	
2B0																	
2B1																	
2B2																	
2B3																	
2B4																	
2B5																	
2B6																	
2B7																	
2B8																	
2B9																	
2BA																	
2BB																	
2BC																	
2BD																	
2BE																	
2BF																	
MODEL									MODEL								
LETTER NO.									LETTER NO.								

MEMORY MAP
(Continued)

ADDRESS	DATA								M/CON	EEPROM	EEPROM	CHASSIS		CTV FINAL		LAST INITIAL	REMARK
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(1/0)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	
2C0																	
2C1																	
2C2																	
2C3																	
2C4																	
2C5																	
2C6																	
2C7																	
2C8																	
2C9																	
2CA																	
2CB																	
2CC																	
2CD																	
2CE																	
2CF																	
2D0																	
2D1																	
2D2																	
2D3																	
2D4																	
2D5																	
2D6																	
2D7																	
2D8																	
2D9																	
2DA																	
2DB																	
2DC																	
2DD																	
2DE																	
2DF																	
2E0																	
2E1																	
2E2																	
2E3																	
2E4																	
2E5																	
2E6																	
2E7																	
2E8																	
2E9																	
2EA																	
2EB																	
2EC																	
2ED																	
2EE																	
2EF																	
2F0																	
2F1																	
2F2																	
2F3																	
2F4																	
2F5																	
2F6																	
2F7																	
2F8																	
2F9																	
2FA																	
2FB																	
2FC																	
2FD																	
2FE																	
2FF																	
MODEL									MODEL								
LETTER NO.									LETTER NO.								

HOTEL MODE APPLICATION

How to enable/disable the "Hotel Mode" ?

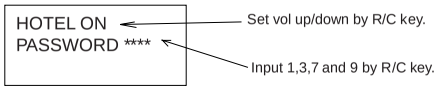
Ans: a) Press the Menu key.

b) Using the CH UP or CH DW key, move the cursor to FEATURE. Press the VL UP or VL DW key.

c) Using the CH UP or CH DW key, move the cursor to BLUE BACK on the menu screen.

d) Hold down the digit key (-/--) of the remote control for 5 seconds or more, and the Hotel Mode will be made active.

e) Key in the four digits password starting with number "1", "3", "7", "9", then the hotel mode will be enable, you can switch on/off the hotel mode by using R/C (volume up/down) key.



#1 Ch 1 is your selected channel for hotel mode.

* We recommend
  Before set the hotel mode, it is better to choose ch 1 & set s-vol level Up to 75% full scale.
  After set hotel mode, starting channel will be always ch 1 & maximum sound level out will be set the half of full scale. (Note: If the sound volume is set to any level below 30, the setting is taken as maximum.)
* If you set hotel mode in AV, starting channel will be the last ch which you received before power off (same as normal operation)

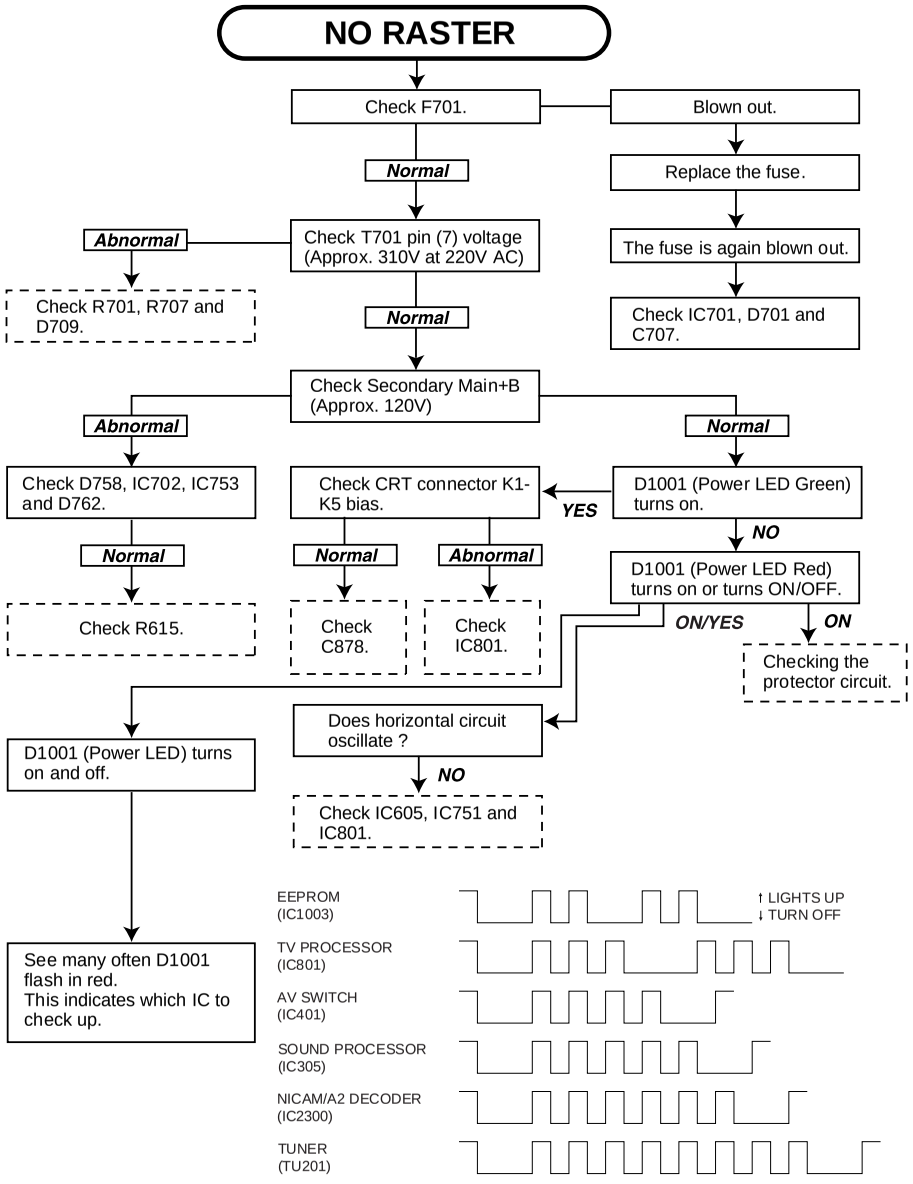
CONDITION:

When using hotel mode, user can control "contrast", "brightness", "sharpness" and "tint" function.
But after power off, it will return to the initial setting.
You can't use:--
- Preset mode
- Fine tuning
- Skip mode
- System selection

The others function is allowed to be used.

TROUBLE SHOOTING TABLE

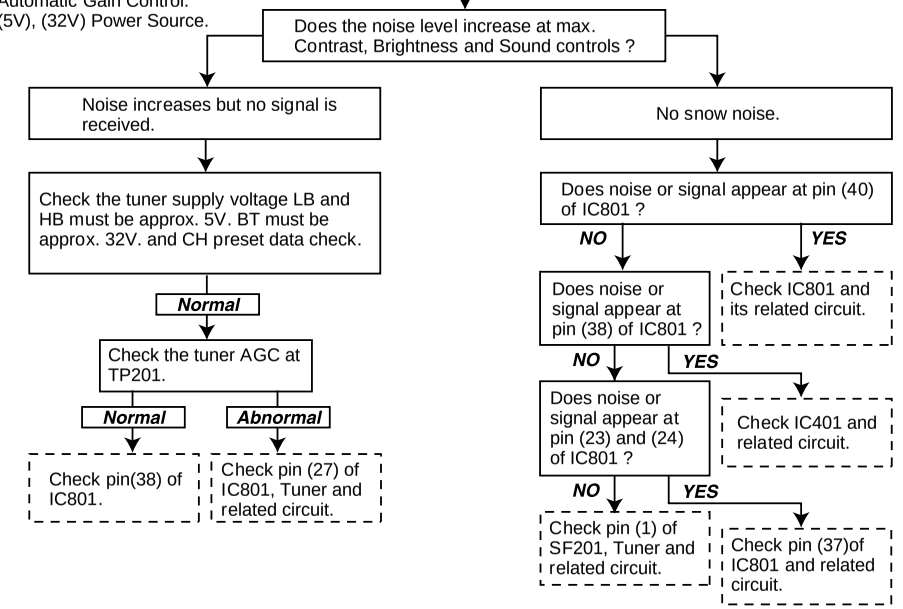
NO RASTER



TROUBLE SHOOTING TABLE (Continued)

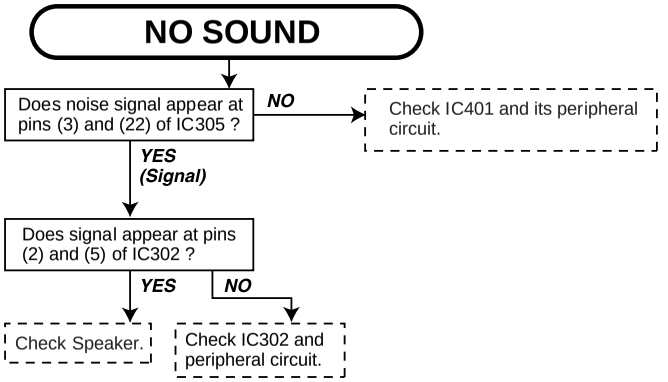
NO PICTURE, NO SOUND

CIRCUITS TO BE CHECKED:
- Tuner.
- PIF.
- Automatic Gain Control.
- (5V), (32V) Power Source.


Does the noise level increase at max. Contrast, Brightness and Sound controls ?
Noise increases but no signal is received.
No snow noise.
Check the tuner supply voltage LB and HB must be approx. 5V. BT must be approx. 32V. and CH preset data check.
Does noise or signal appear at pin (40) of IC801 ?
NO
YES
Normal
Does noise or signal appear at pin (38) of IC801 ?
Check IC801 and its related circuit.
Check the tuner AGC at TP201.
NO
YES
Normal
Abnormal
Does noise or signal appear at pin (23) and (24) of IC801 ?
Check IC401 and related circuit.
Check pin(38) of IC801.
Check pin (27) of IC801, Tuner and related circuit.
NO
YES
Check pin (1) of SF201, Tuner and related circuit.
Check pin (37)of IC801 and related circuit.

NO SOUND

CIRCUITS TO BE CHECKED:
- Sound Detector Circuit.
- Sound Switch and Att. Control.
- Audio Output Circuit.


Does noise signal appear at pins (3) and (22) of IC305 ?
NO
Check IC401 and its peripheral circuit.
YES (Signal)
Does signal appear at pins (2) and (5) of IC302 ?
YES
NO
Check Speaker.
Check IC302 and peripheral circuit.

TROUBLE SHOOTING TABLE (Continued)

NEITHER VERTICAL NOR HORIZONTAL SYNCHRONIZATION

CIRCUIT TO BE CHECKED:
- Sync. Separator Circuit.

Check pins(33) and (34) of IC801.

DEFECTIVE VERTICAL AMP. AND VERTICAL LINEARITY

Readjust vertical size. (Bas Data)

Vertical linearity and size is abnormal.

Check R504, R506, R513 and C517.

NO VERTICAL SCAN

Check IC501 bias.

- *Normal* → Check C506 and C507.
- *Abnormal* → Check IC501.

TROUBLE SHOOTING TABLE (Continued)

NO SPECIFIC COLOUR

Is some colour produced in B/W broadcast reception ?

- *NO* → Check IC801, R801, R802, R803, D804, D805, D806 and Q801.
- *YES* → Is the white balance properly adjusted ?
  - *NO* → Readjust the white balance.
  - *YES* →
    - The picture colour is cyan. → Check Q870, Q885 and their adjacent circuits.
    - The picture colour is magenta. → Check Q871, Q883 and their adjacent circuits.
    - The picture colour is yellow. → Check Q872, Q887 and their adjacent circuits.

NO SPECIFIC COLOUR
"PAL / SECAM / NTSC"
(NO COLOUR SYNCHRONIZATION)

Check IC801 and bias control circuit.

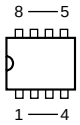
Normal

Check X1001.(12MHz)

NOTE:
21XF30 do not have SECAM COLOUR SYSTEM and Only receive N4.43/3.58 through AV.

SOLID STATE DEVICE BASE DIAGRAM

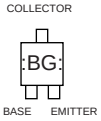
TOP VIEW



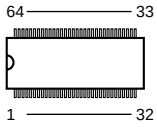
M24C08W

FX0008GE

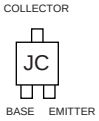
D601A



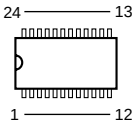
B709A



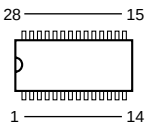
iX3411CEN5



2SC2735

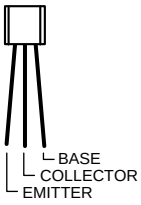


AN5891

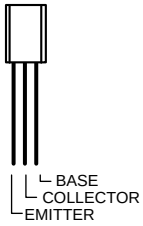


M52797

SIDE VIEW



2SC1815
2SA1015



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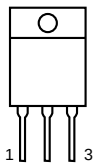
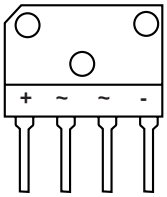


SE120N



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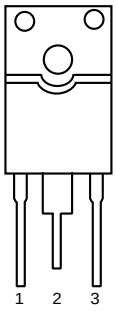

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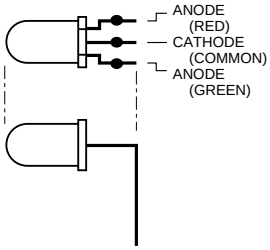

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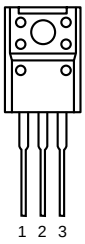
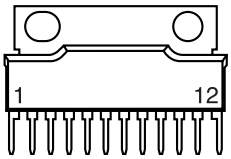


KA7808
KA7805



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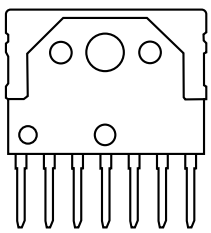

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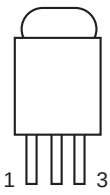

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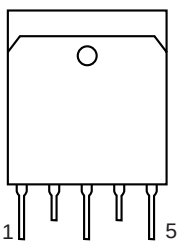

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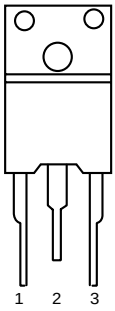
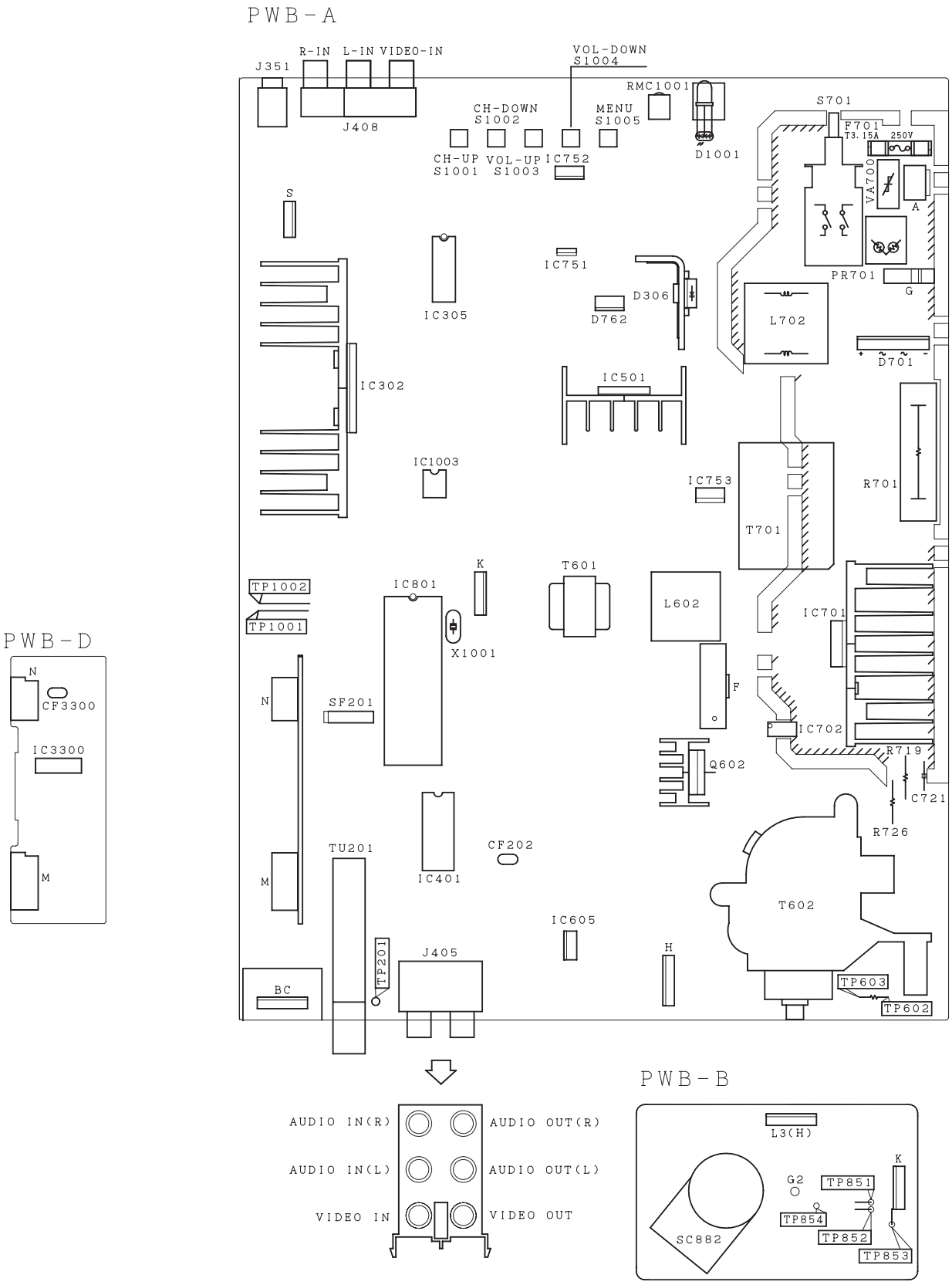


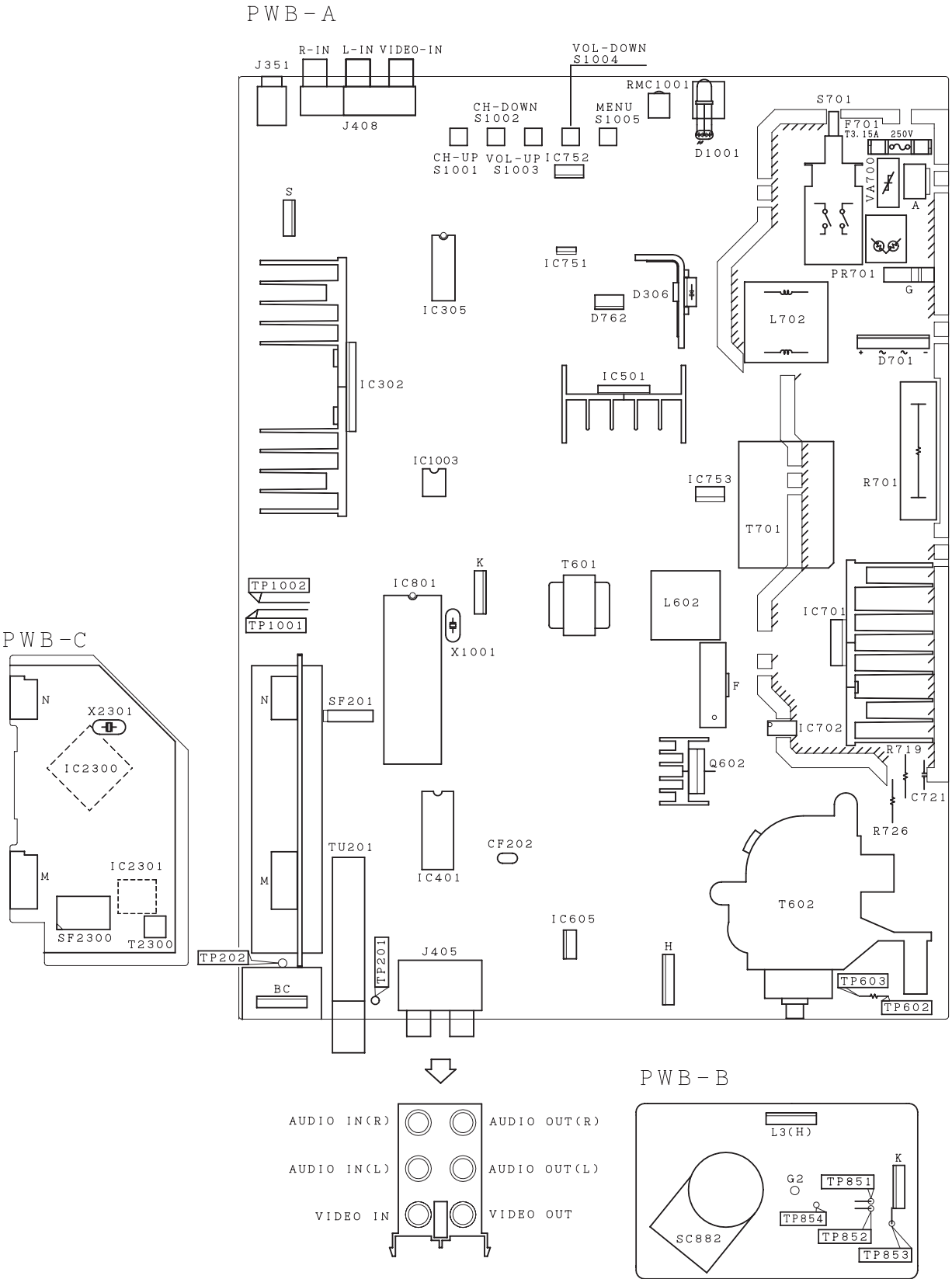
TF321S

- M E M O -

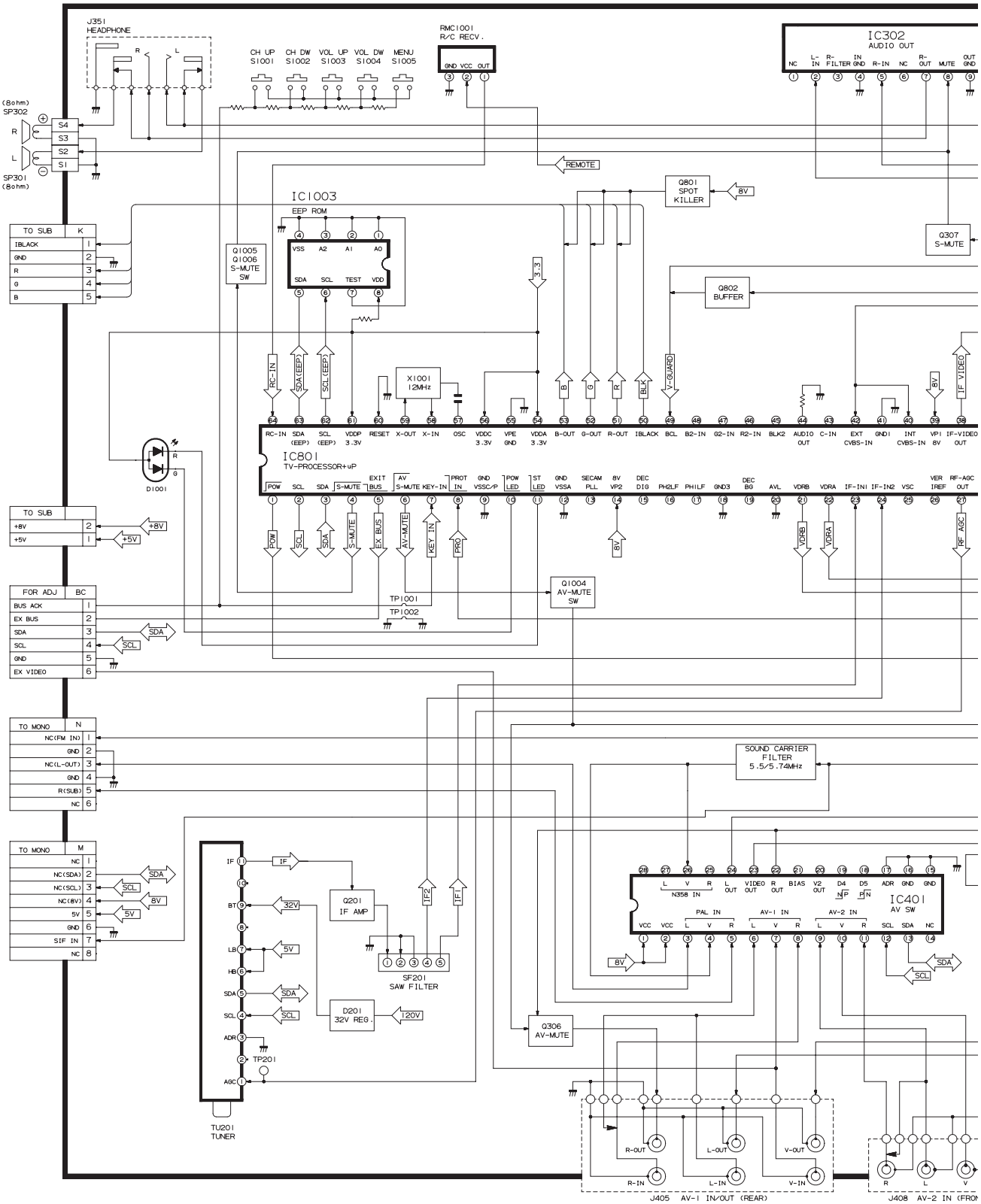
CHASSIS LAYOUT(21XF30)

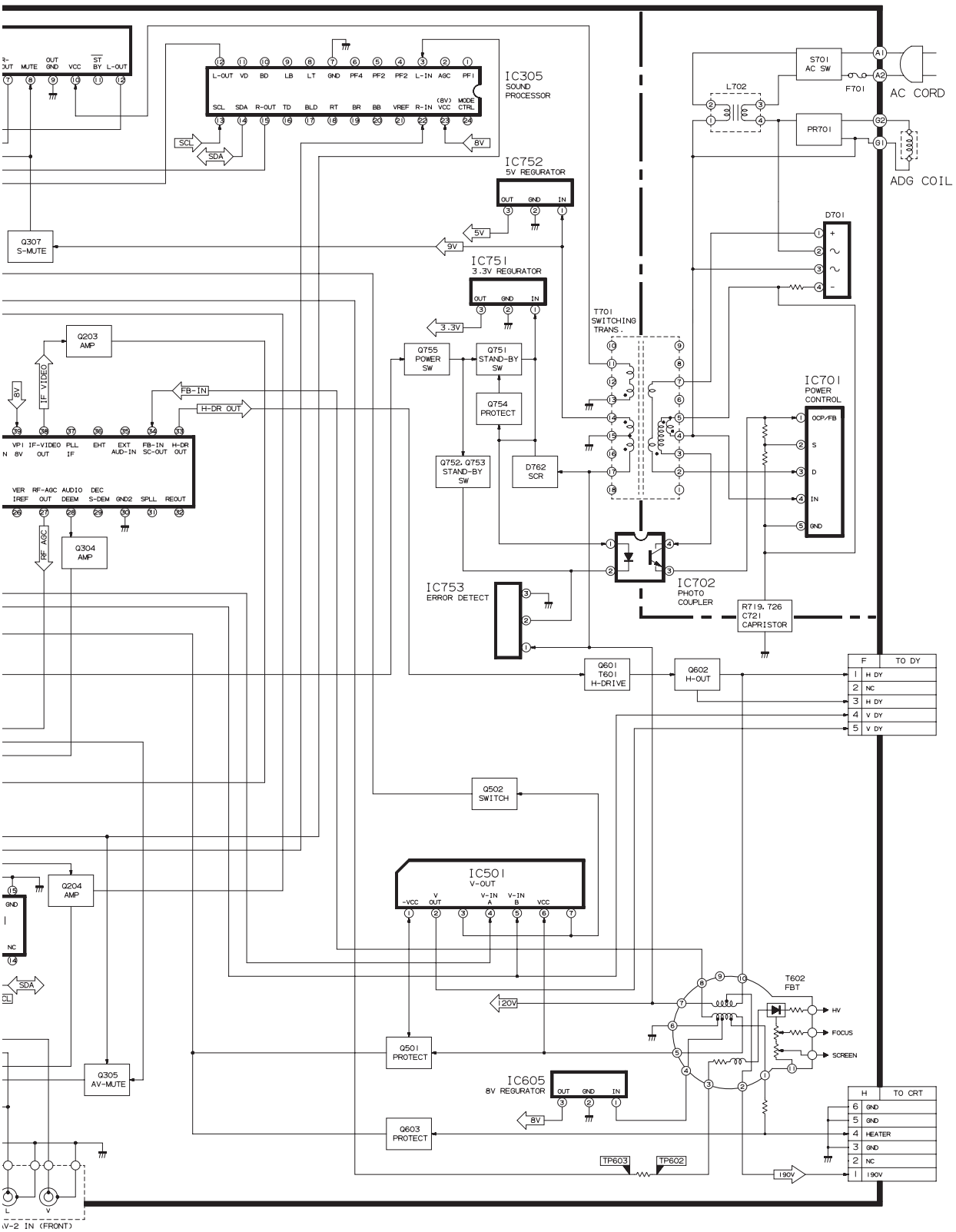


CHASSIS LAYOUT(21XF50)

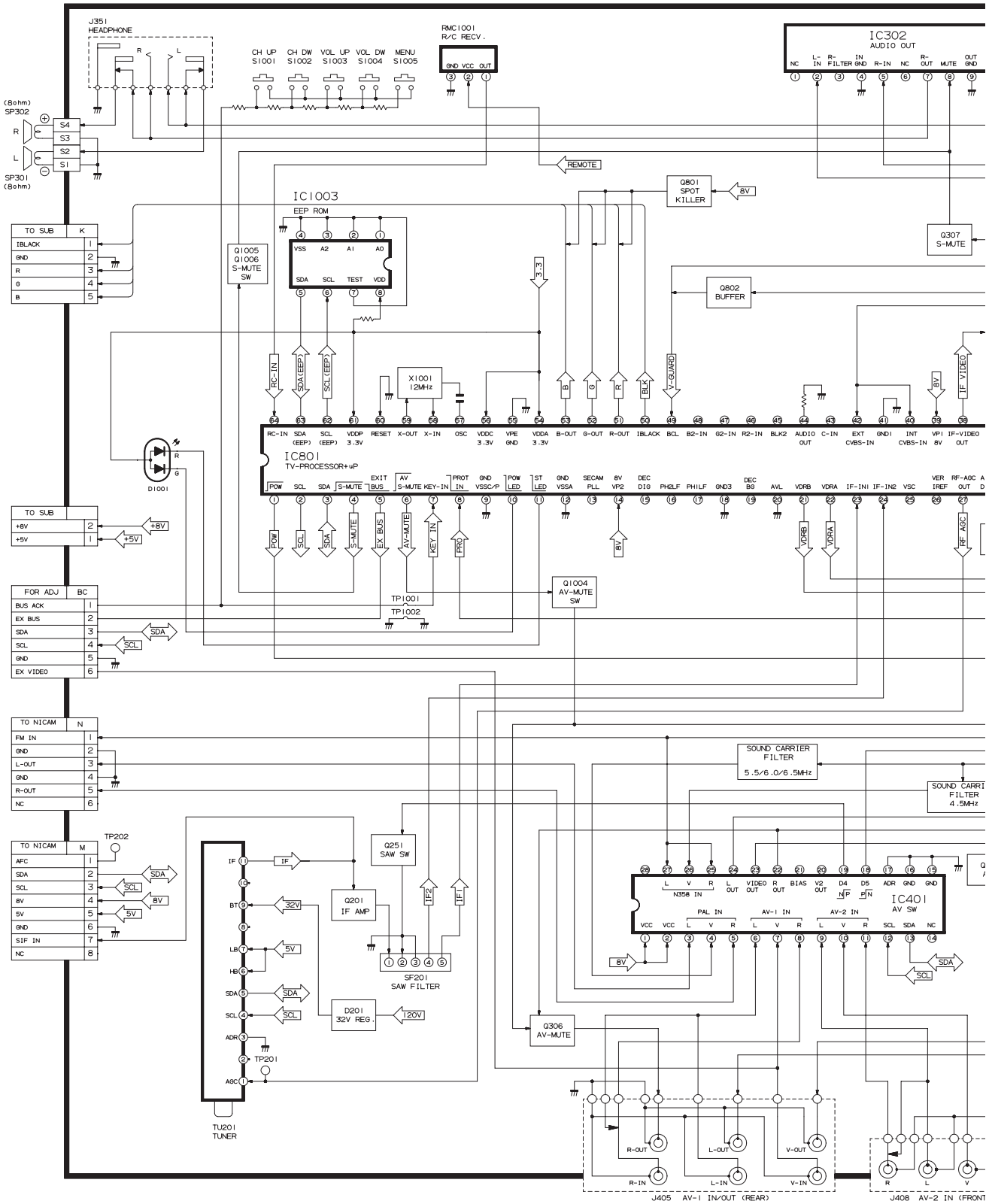


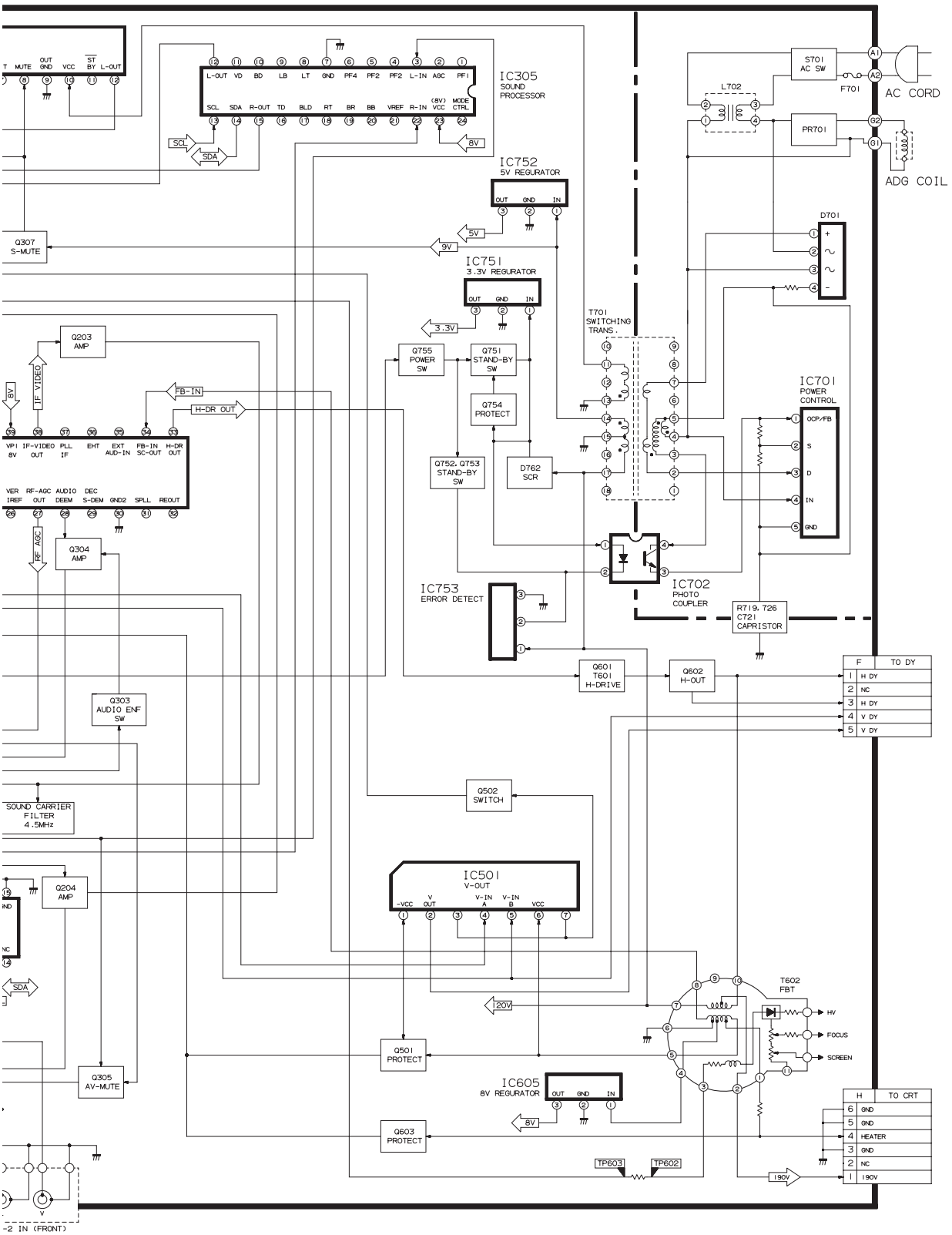
BLOCK DIAGRAMS
MAIN 1 UNIT (21XF30)



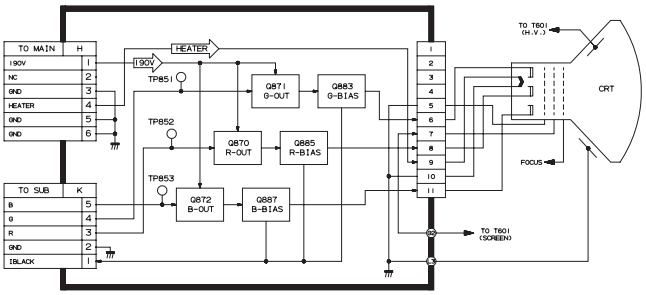

IC305
SOUND PROCESSOR
L-OUT VD BD LB LT GND PF4 PF2 PF2 L-IN AGC PFI
SCL SDA R-OUT TD BLD RT BR BB VREF R-IN (8V) VCC MODE CTRL
IC752
5V REGURATOR
IN GND OUT
IC751
3.3V REGURATOR
Q307
S-MUTE
Q203
AMP
IF VIDEO
FB-IN
H-DR OUT
Q304
AMP
AGC
Q204
AMP
Q305
AV-MUTE
Q755
POWER SW
Q751
STAND-BY SW
Q754
PROTECT
Q752, Q753
STAND-BY SW
D762
SCR
T701
SWITCHING TRANS.
IC701
POWER CONTROL
OCP/FB
IC702
PHOTO COUPLER
IC753
ERROR DETECT
R719, 726
C721
CAPRISTOR
Q601
T601
H-DRIVE
Q602
H-OUT
Q502
SWITCH
IC501
V-OUT
Q501
PROTECT
Q603
PROTECT
IC605
8V REGURATOR
T602
FBT
HV
FOCUS
SCREEN
TP603
TP602
S701
AC SW
F701
AC CORD
L702
PR701
ADG COIL
D701
F TO DY
1 H DY
2 NC
3 H DY
4 V DY
5 V DY
H TO CRT
6 GND
5 GND
4 HEATER
3 GND
2 NC
1 190V

MAIN 1 UNIT (21XF50)

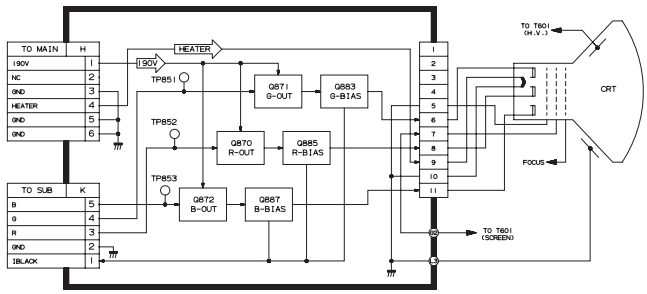



IC305
SOUND PROCESSOR
L-OUT VD BD LB LT GND PF4 PF2 PF2 L-IN AGC PF1
SCL SDA R-OUT TD BLD RT BR BB VREF R-IN (8V) VCC MODE CTRL
SCL
SDA
8V
IC752
5V REGURATOR
OUT GND IN
5V
9V
Q307
S-MUTE
IC751
3.3V REGURATOR
OUT GND IN
3.3V
S701
AC SW
F701
AC CORD
L702
PR701
ADG COIL
D701
T701
SWITCHING TRANS.
Q203
AMP
IF VIDEO
8V
FB-IN
H-DR OUT
VPI 8V
IF-VIDEO OUT
PLL IF
EHT
EXT AUD-IN
FB-IN SC-OUT
H-DR OUT
VER IREF
RF-AGC OUT
AUDIO DEEM
DEC S-DEM
GND2
SPLL
REOUT
RF AGC
Q304
AMP
Q755
POWER SW
Q751
STAND-BY SW
Q754
PROTECT
Q752, Q753
STAND-BY SW
D762
SCR
IC701
POWER CONTROL
OCP/FB
S
D
IN
GND
IC753
ERROR DETECT
IC702
PHOTO COUPLER
R719, 726
C721
CAPRISTOR
Q601
T601
H-DRIVE
Q602
H-OUT
F TO DY
1 H DY
2 NC
3 H DY
4 V DY
5 V DY
Q303
AUDIO ENF SW
SOUND CARRIER FILTER
4.5MHz
Q502
SWITCH
IC501
V-OUT
-VCC V OUT V-IN A V-IN B VCC
Q204
AMP
SDA
120V
T602
FBT
HV
FOCUS
SCREEN
Q501
PROTECT
Q305
AV-MUTE
IC605
8V REGURATOR
OUT GND IN
8V
Q603
PROTECT
TP603
TP602
190V
H TO CRT
6 GND
5 GND
4 HEATER
3 GND
2 NC
1 190V
-2 IN (FRONT)

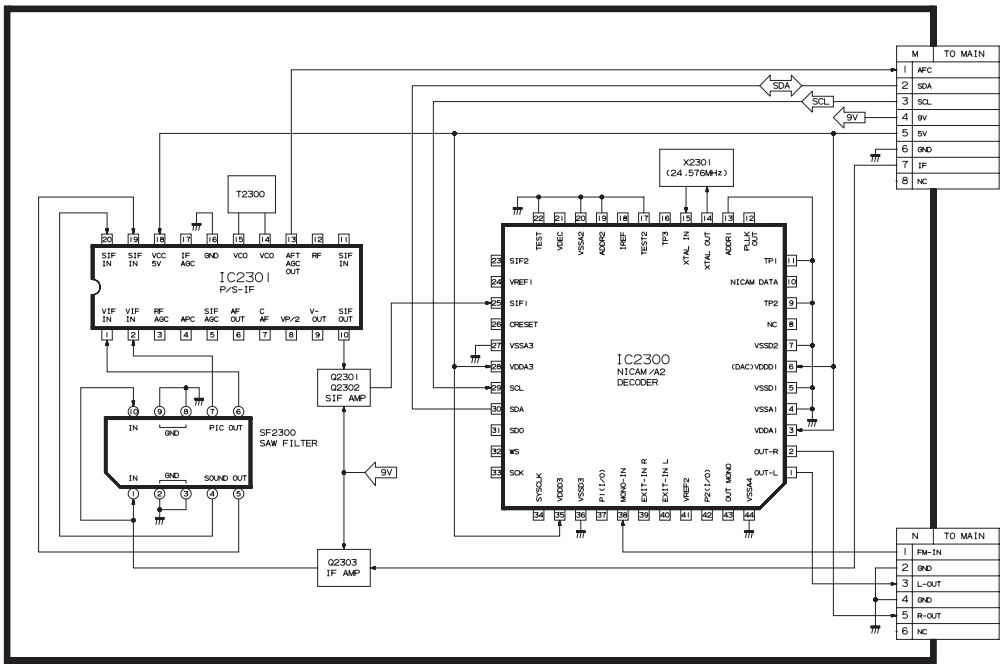
CRT UNIT (21XF30)



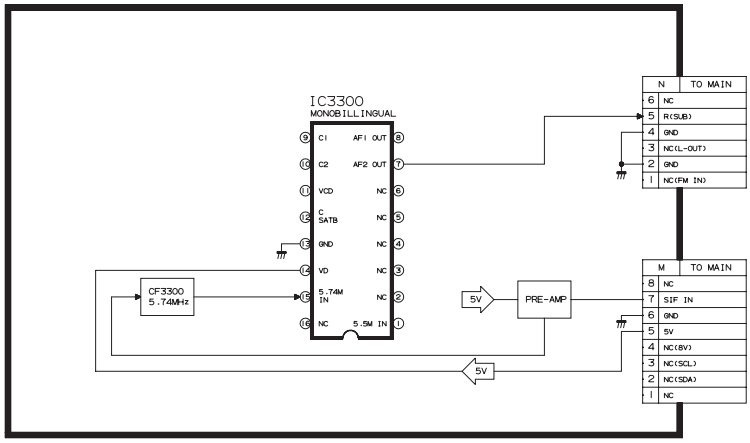
CRT UNIT (21XF50)



NICAM/A2 UNIT (21XF50)

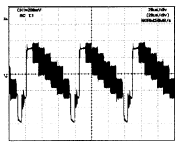


MONO-BILLINGUAL UNIT (21XF30)



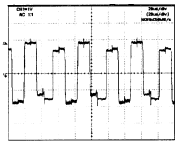
WAVEFORMS

1) 0.98 Vp-p



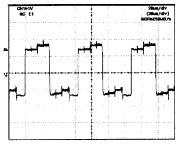
Horiz Rate

2) 4.08 Vp-p



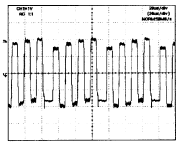
Horiz Rate

3) 3.68 Vp-p



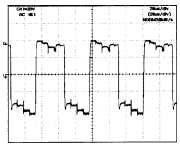
Horiz Rate

4) 4.2 Vp-p



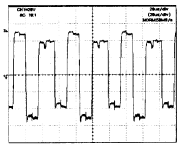
Horiz Rate

5) 88.8 Vp-p



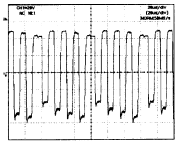
Horiz Rate

6) 107.2 Vp-p



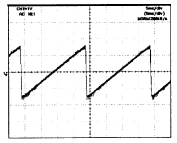
Horiz Rate

7) 109.6 Vp-p



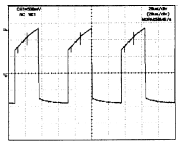
Horiz Rate

8) 3.32 Vp-p



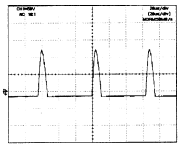
Vert Rate

9) 2.28 Vp-p



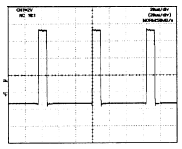
Horiz Rate

10) 138 Vp-p



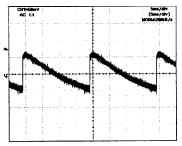
Horiz Rate

11) 9.12 Vp-p



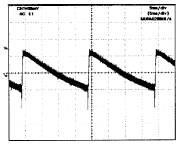
Horiz Rate

12) 0.13 Vp-p



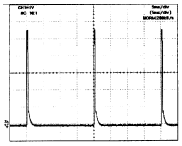
Vert Rate

13) 0.18 Vp-p



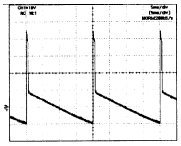
Vert Rate

14) 5.72 Vp-p



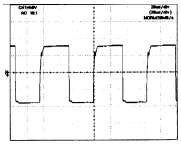
Vert Rate

15) 55.2 Vp-p



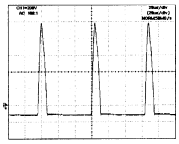
Vert Rate

16) 170 Vp-p



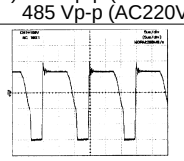
Horiz Rate

17) 1104 Vp-p

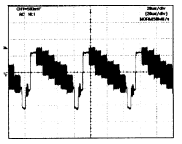


Horiz Rate

18) 324 Vp-p (AC110V)
485 Vp-p (AC220V)



19) 1.9 Vp-p (V)



Horiz Rate

DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTES:

1. *DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.*
2. *SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.*

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH " ⚠ " ( ) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (—– - —–) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE.
WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTES:

1. *The unit of resistance "ohm" is omitted. (K = 1000 ohms, M = Mega ohm).*
2. *All resistors are 1/16 watt, unless otherwise noted.*
3. *All capacitors are μF, unless otherwise noted. (P = μμF).*

VOLTAGE MEASUREMENT CONDITIONS:

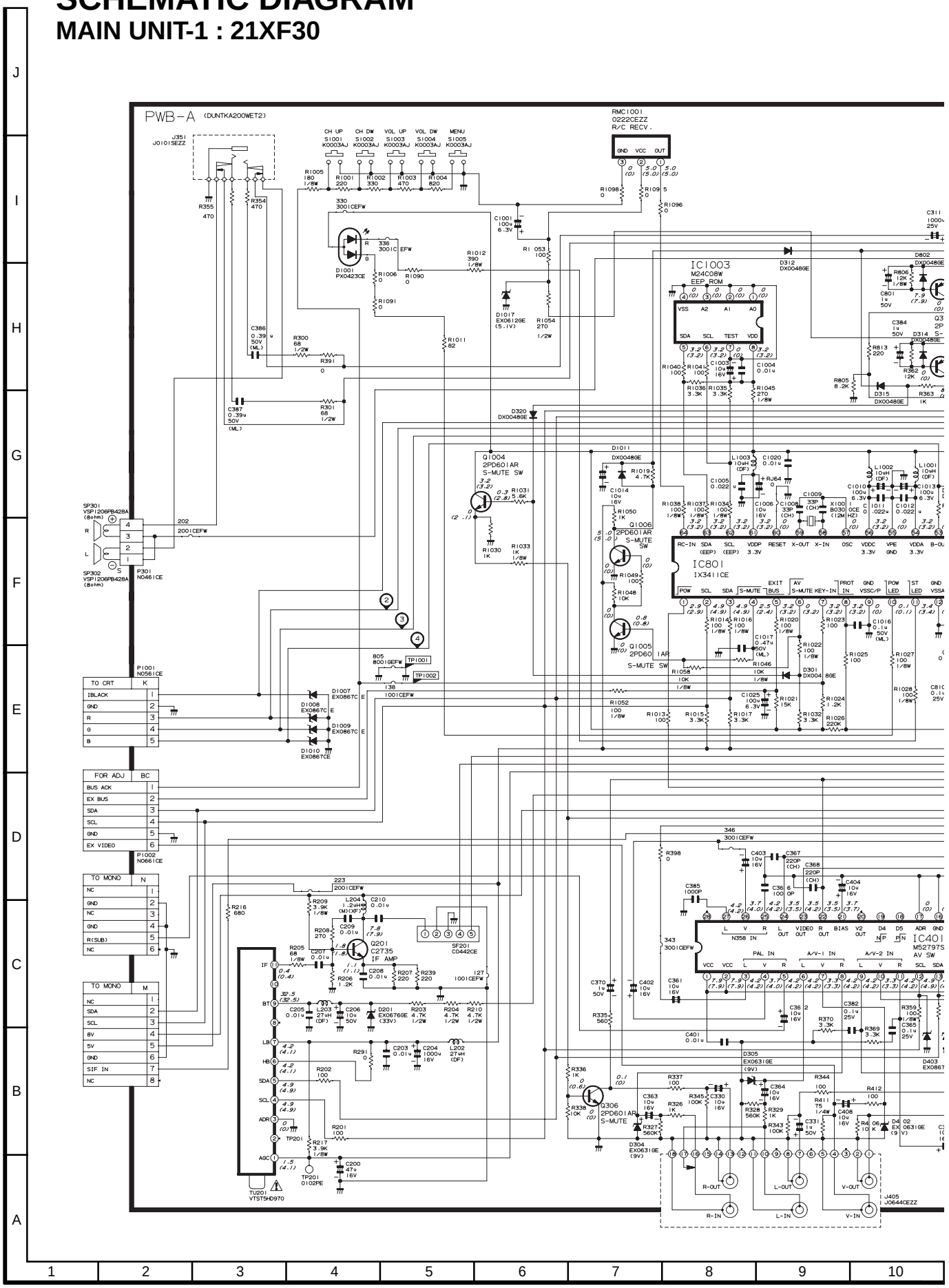
1. *Voltages in parenthesis measured with no signal.*
2. *Voltages without parenthesis measured with 3mV B & W or Colour signal.*
3. *All the voltages in each point are measured with VTVM.*

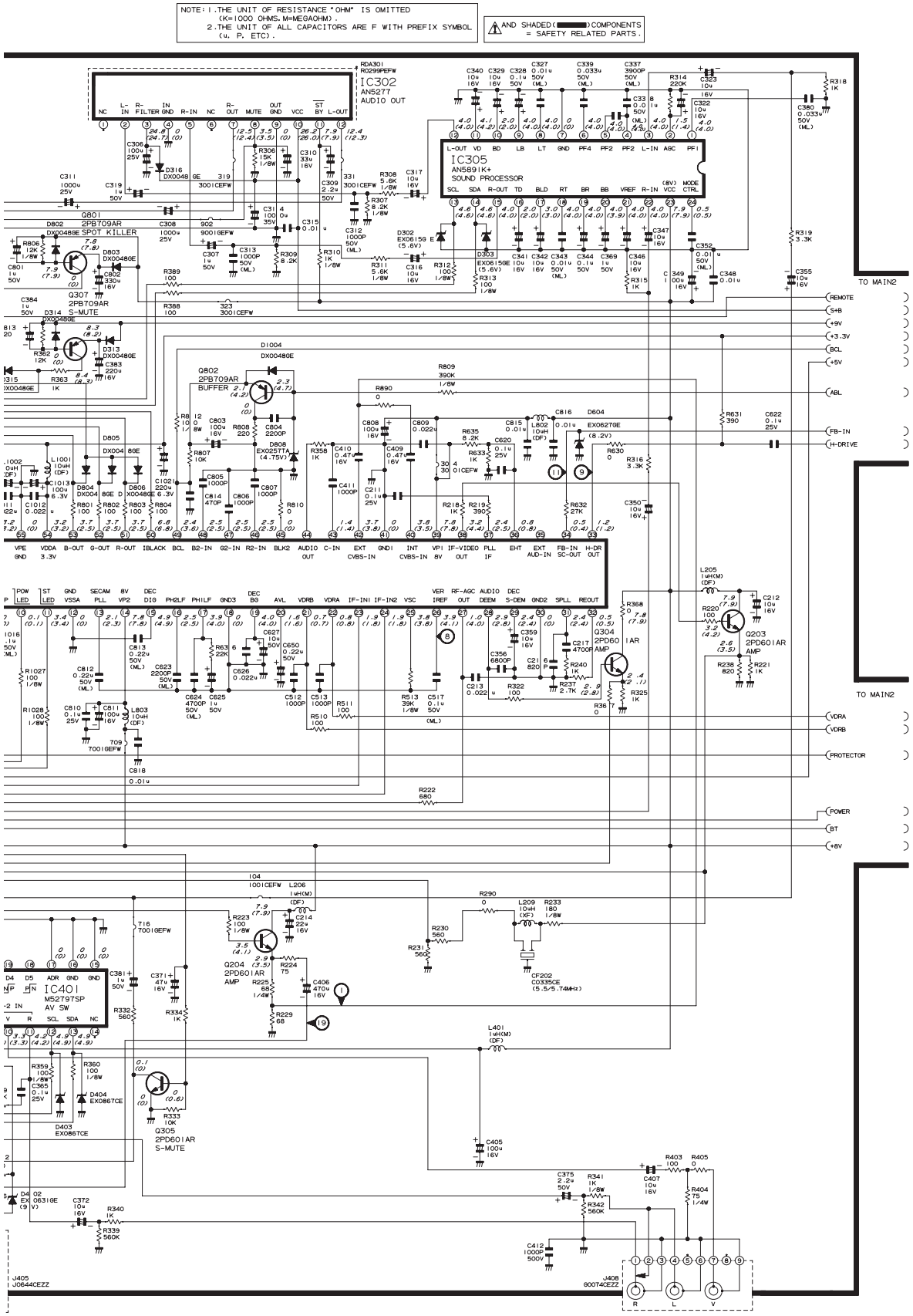
WAVEFORM MEASUREMENT CONDITIONS:

1. *The colour bar generator signal of 1.0V peak applied at pin (24) of IC201.*
2. *Approximately 4V AGC bias .*

SCHEMATIC DIAGRAM

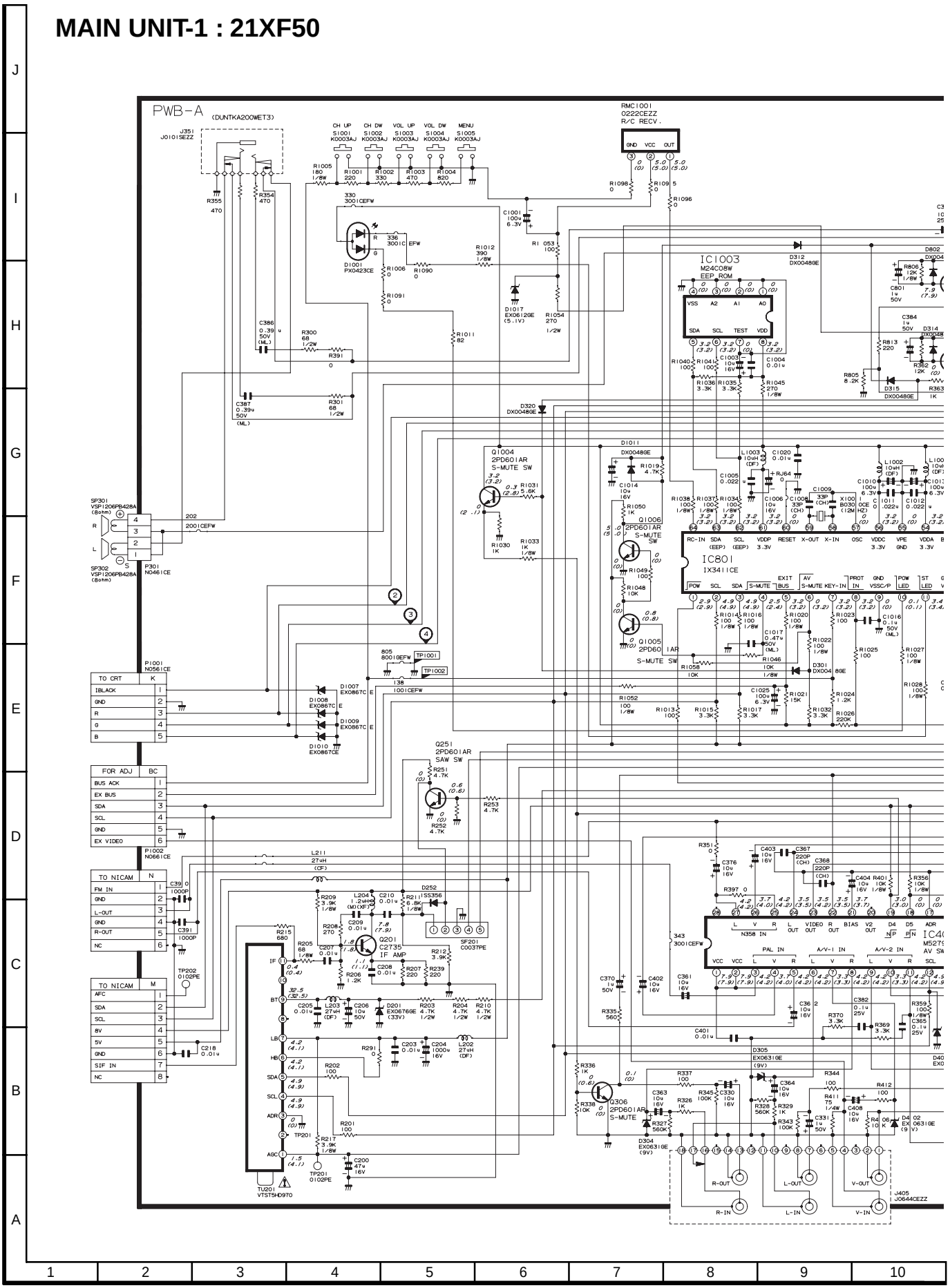
MAIN UNIT-1 : 21XF30

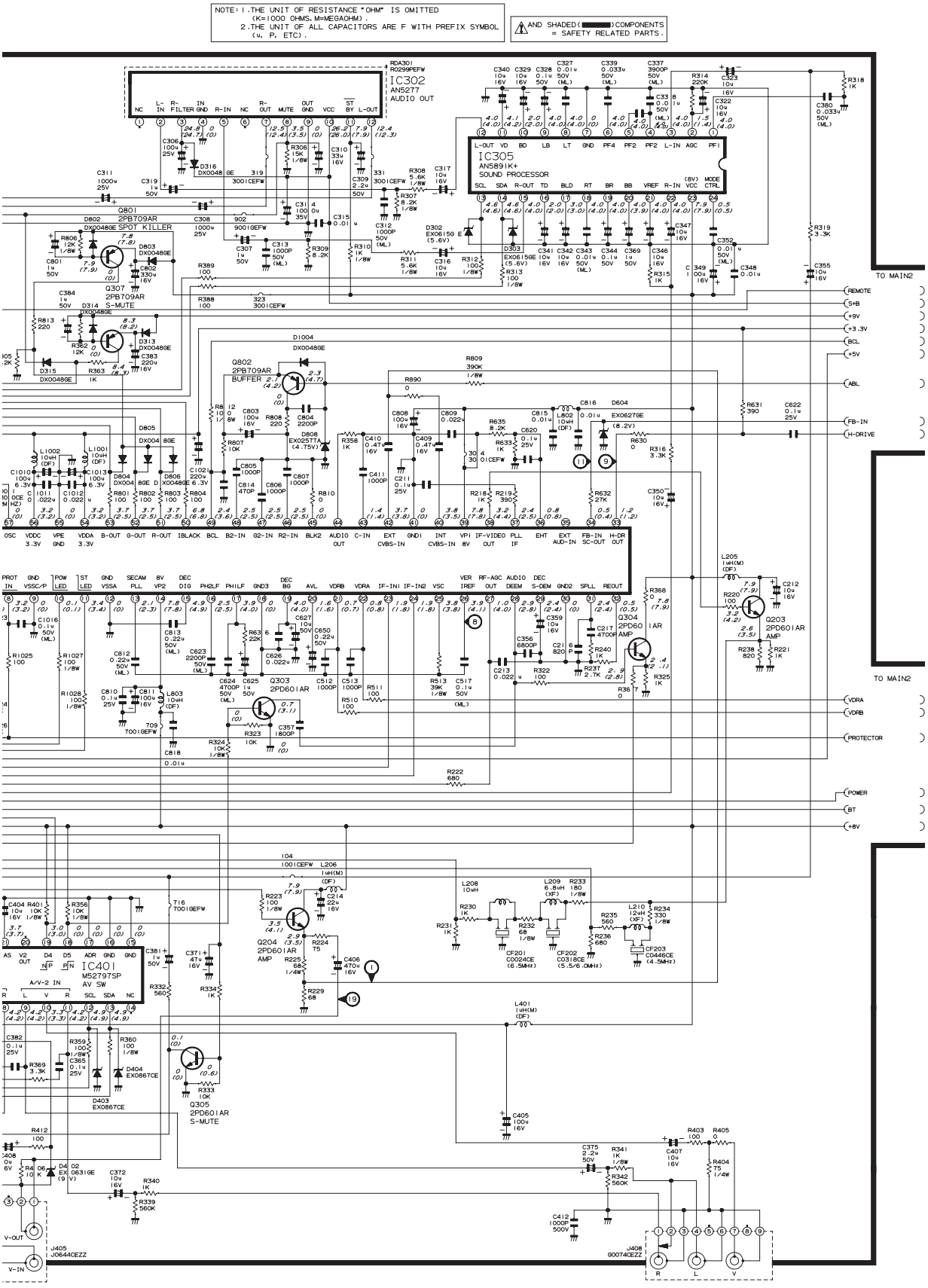




10	11	12	13	14	15	16	17	18	19

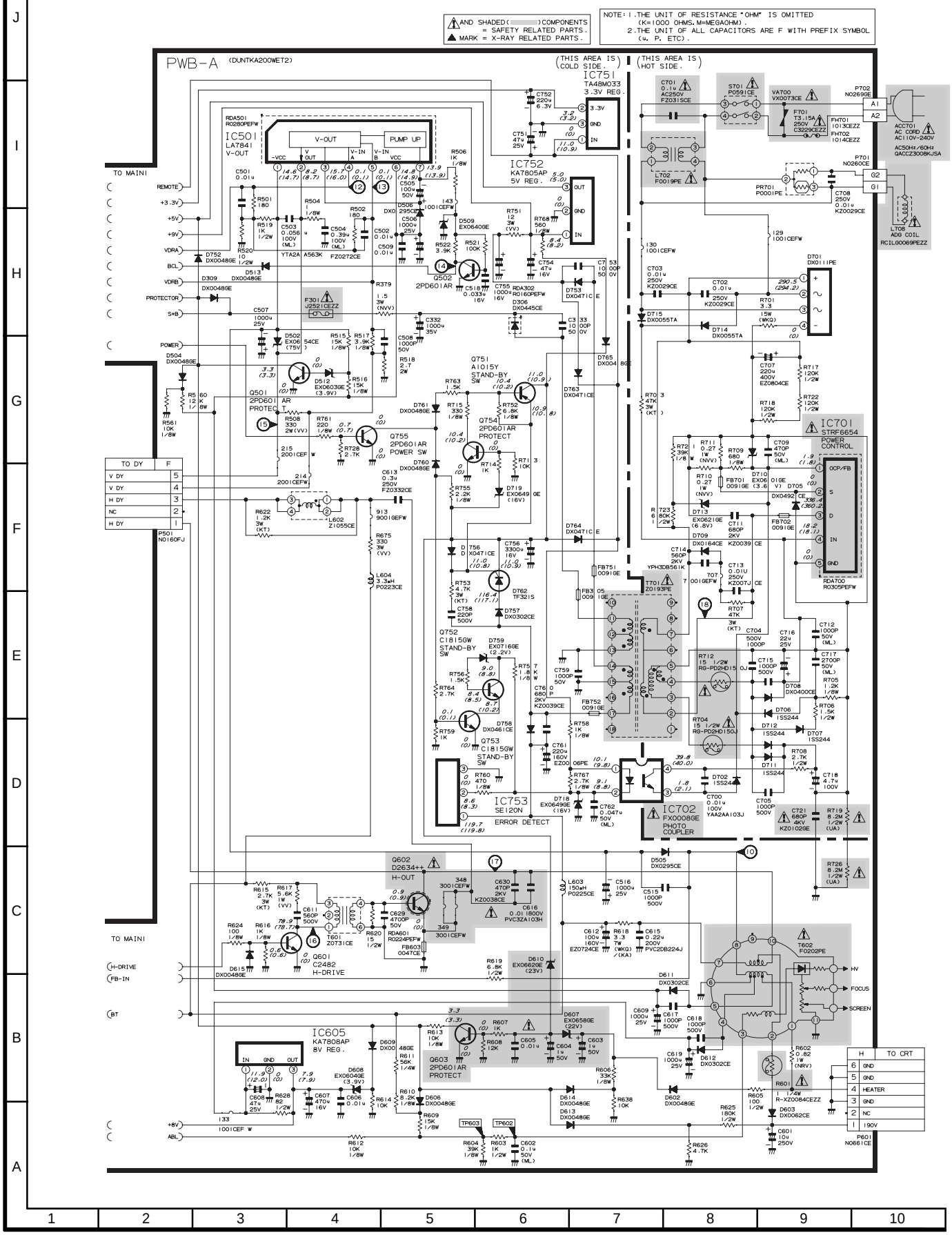
MAIN UNIT-1 : 21XF50



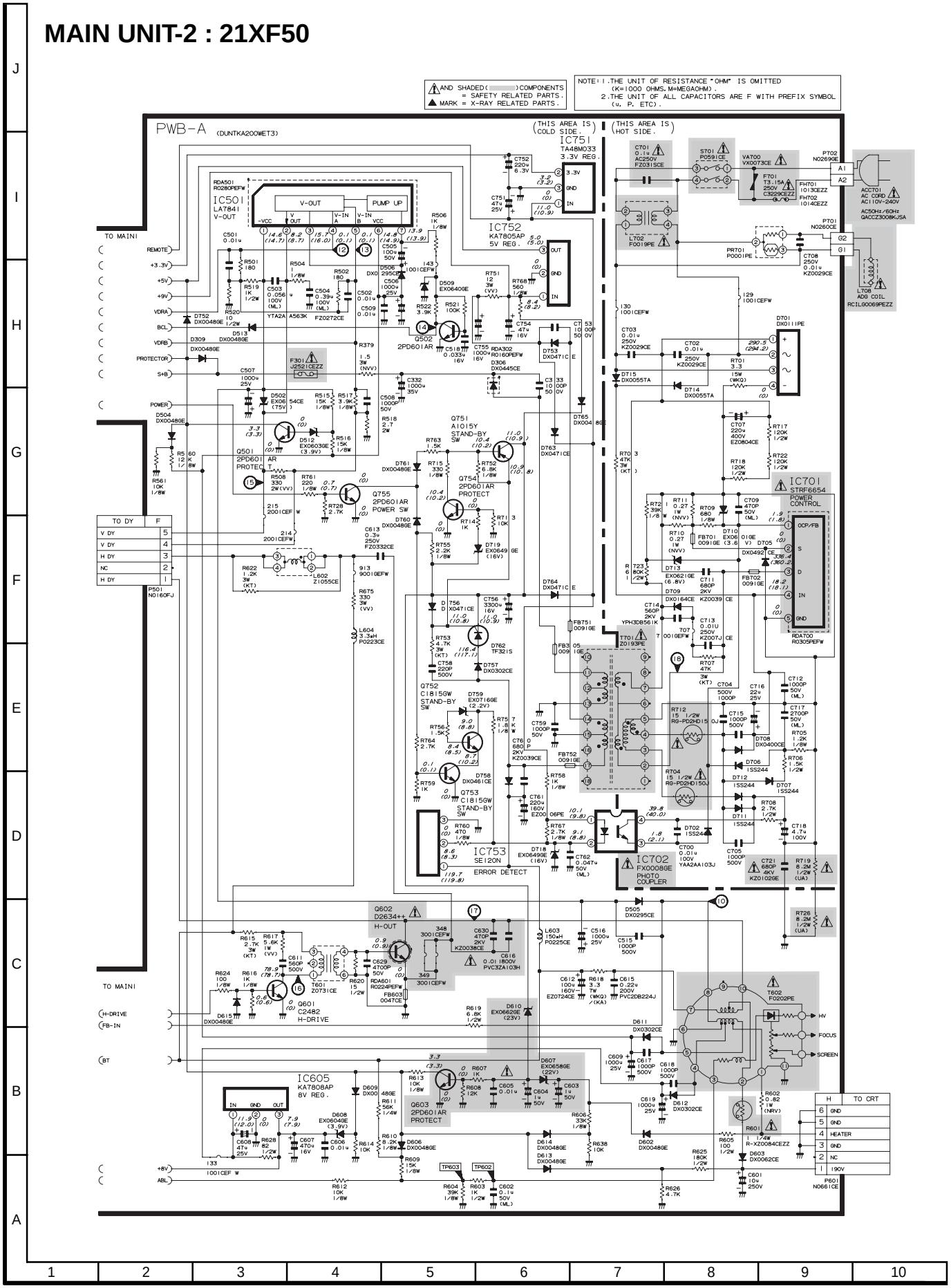


10	11	12	13	14	15	16	17	18	19

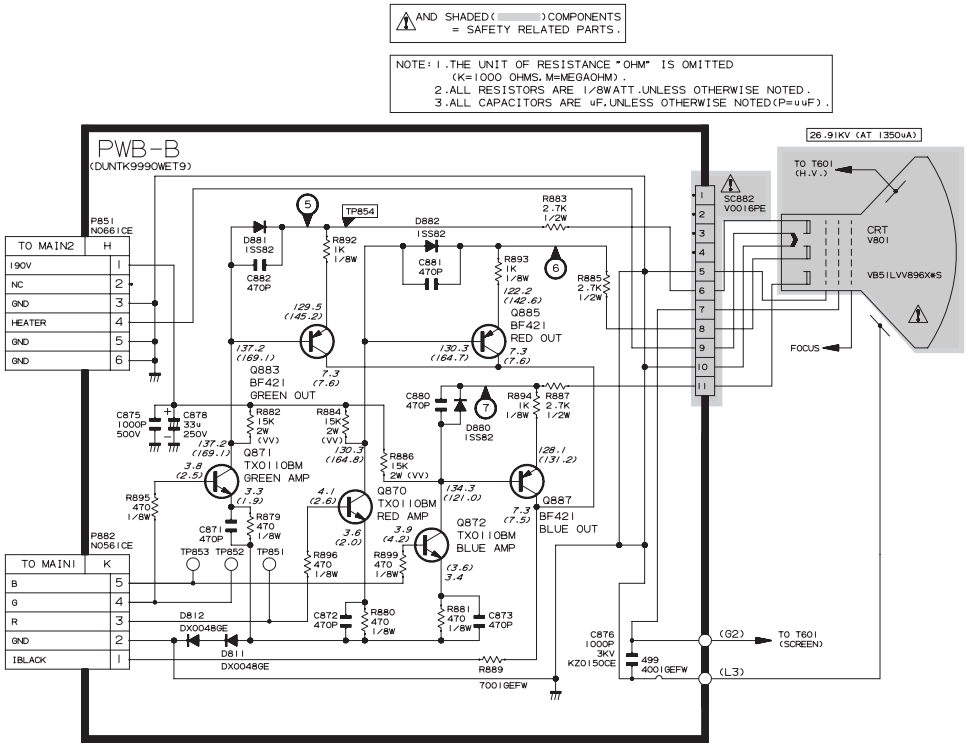
MAIN UNIT-2 : 21XF30



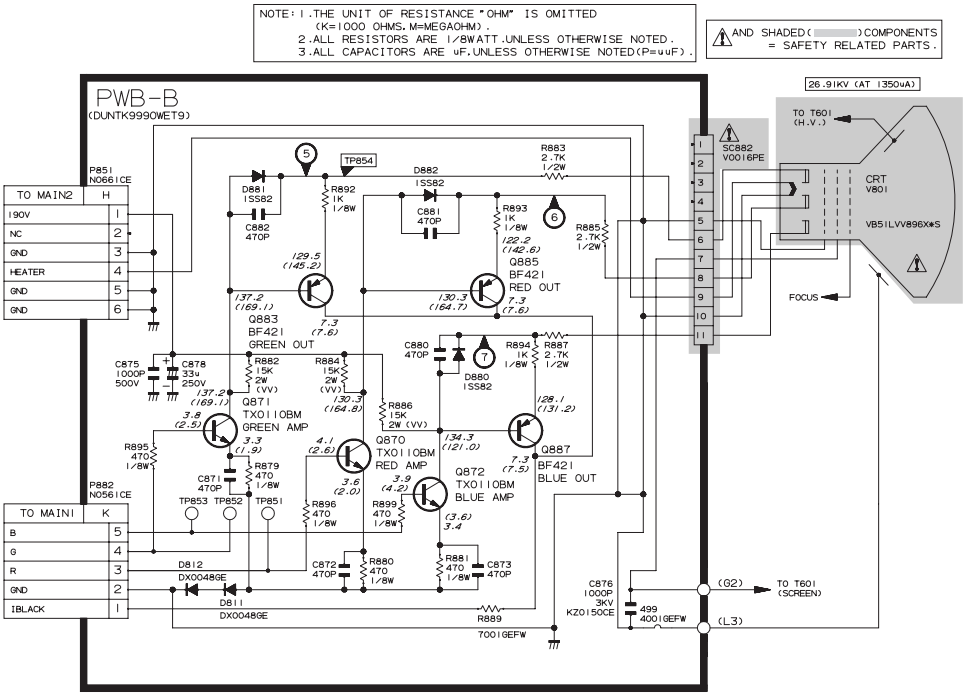
MAIN UNIT-2 : 21XF50



CRT UNIT: 21XF30

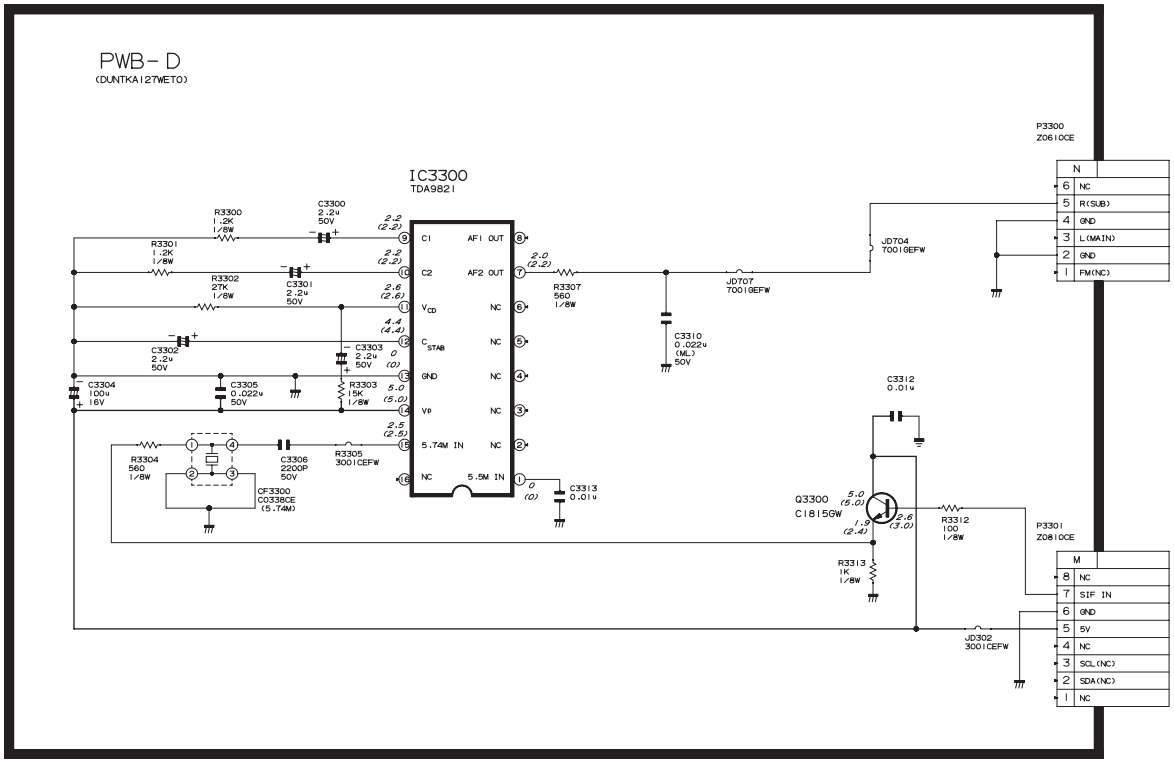


CRT UNIT: 21XF50



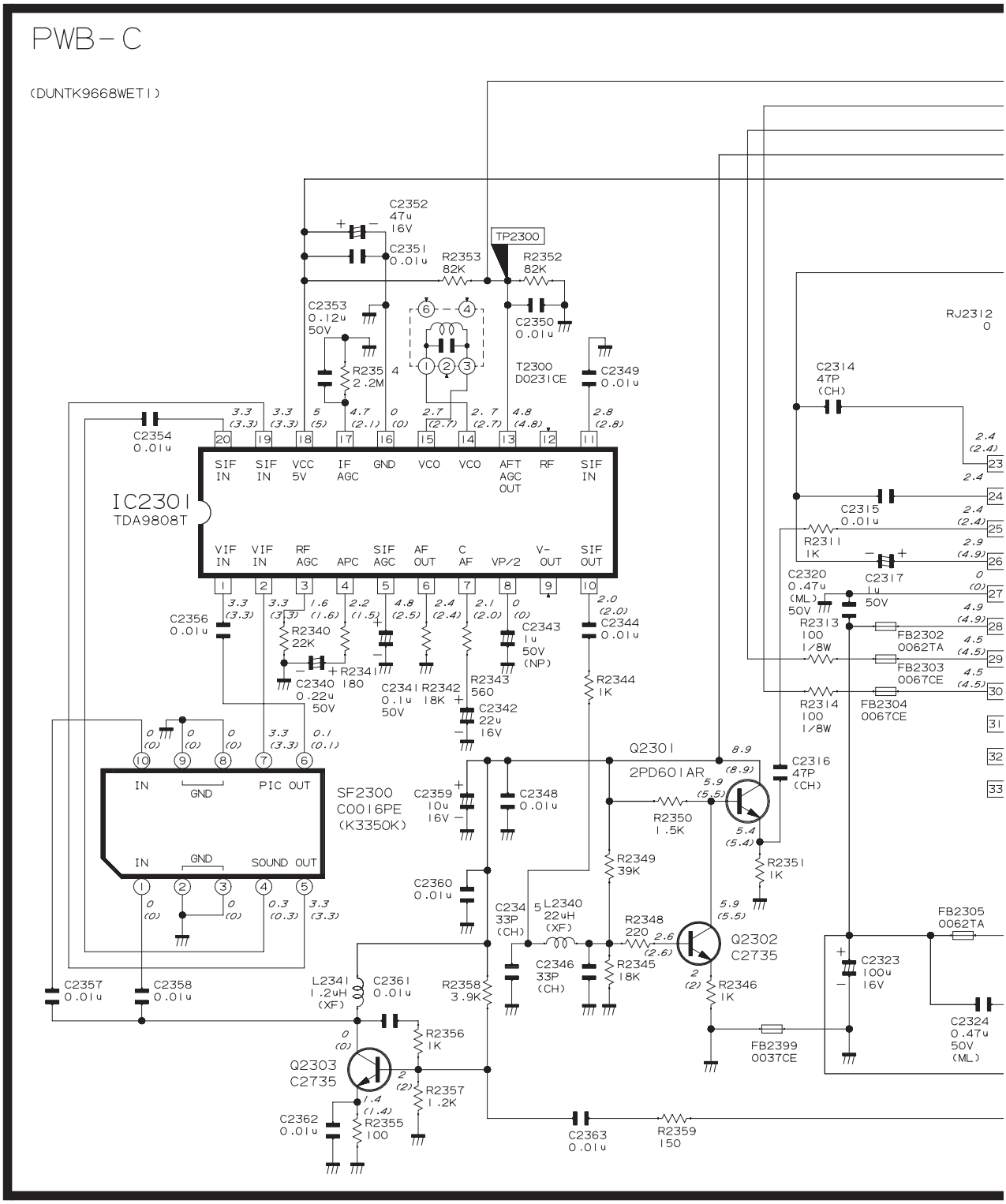
MONO BILLINGUAL UNIT : 21XF30

NOTE: 1.THE UNIT OF RESISTANCE "OHM" IS OMITTED
(K=1000 OHMS, M=MEGAOHM).
2.ALL RESISTORS ARE 1/8WATT.UNLESS OTHERWISE NOTED.
3.ALL CAPACITORS ARE uF.UNLESS OTHERWISE NOTED(P=uuF).

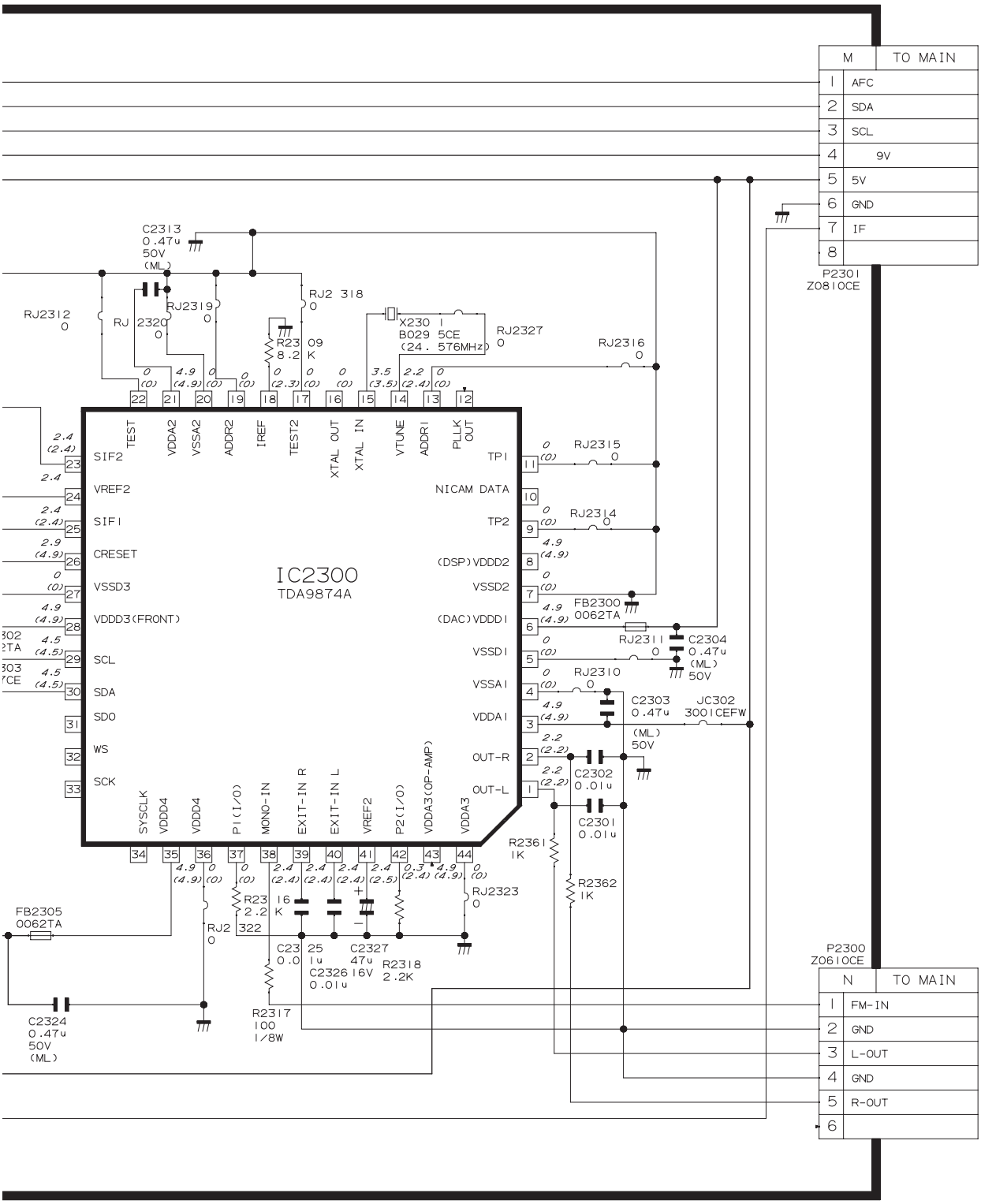


NICAM/A2 UNIT : 21XF50

NOTE: 1.THE UNIT OF RESISTANCE "O
(K=1000 OHMS, M=MEGAOHM).
2.ALL RESISTORS ARE 1/16 WA
3.UNIT OF ALL CAPACITORS AR
(u, P, ETC).



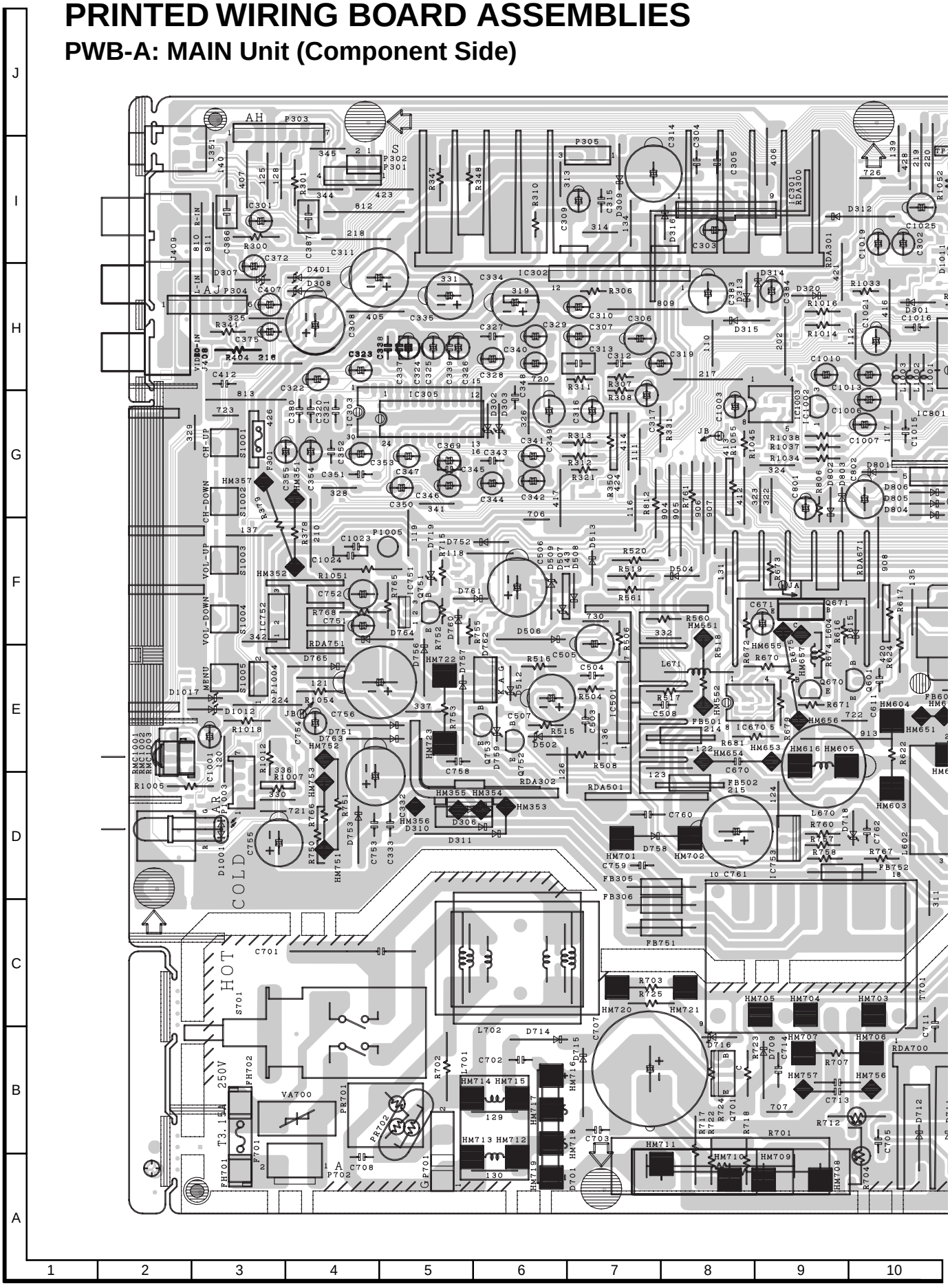
STANCE "OHM" IS OMITTED
EGAOHM).
E 1/16 WATT.UNLESS OTHERWISE NOTED.
CITORS ARE F WITH PREFIX SYMBOL

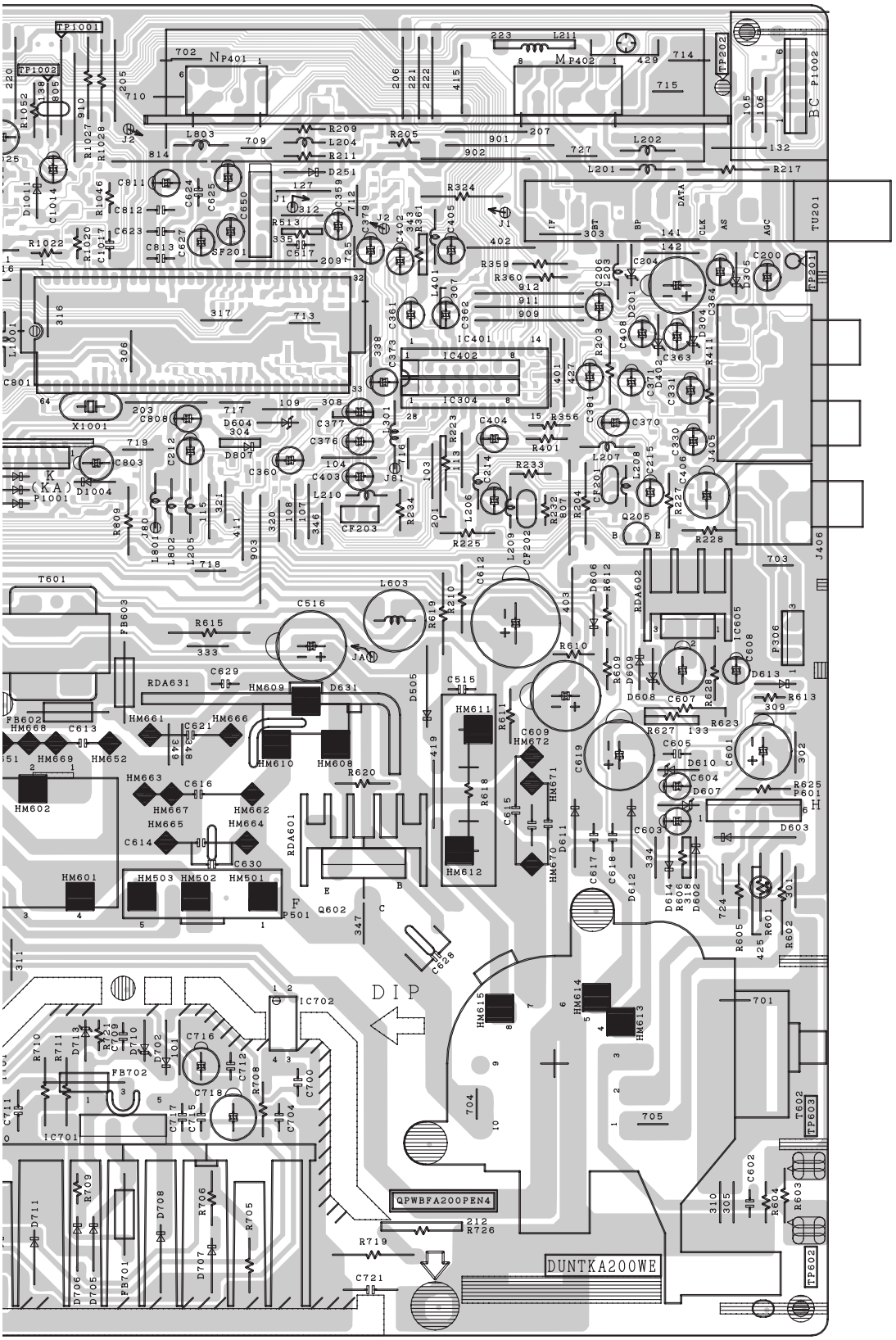


10	11	12	13	14	15	16	17	18	19

PRINTED WIRING BOARD ASSEMBLIES

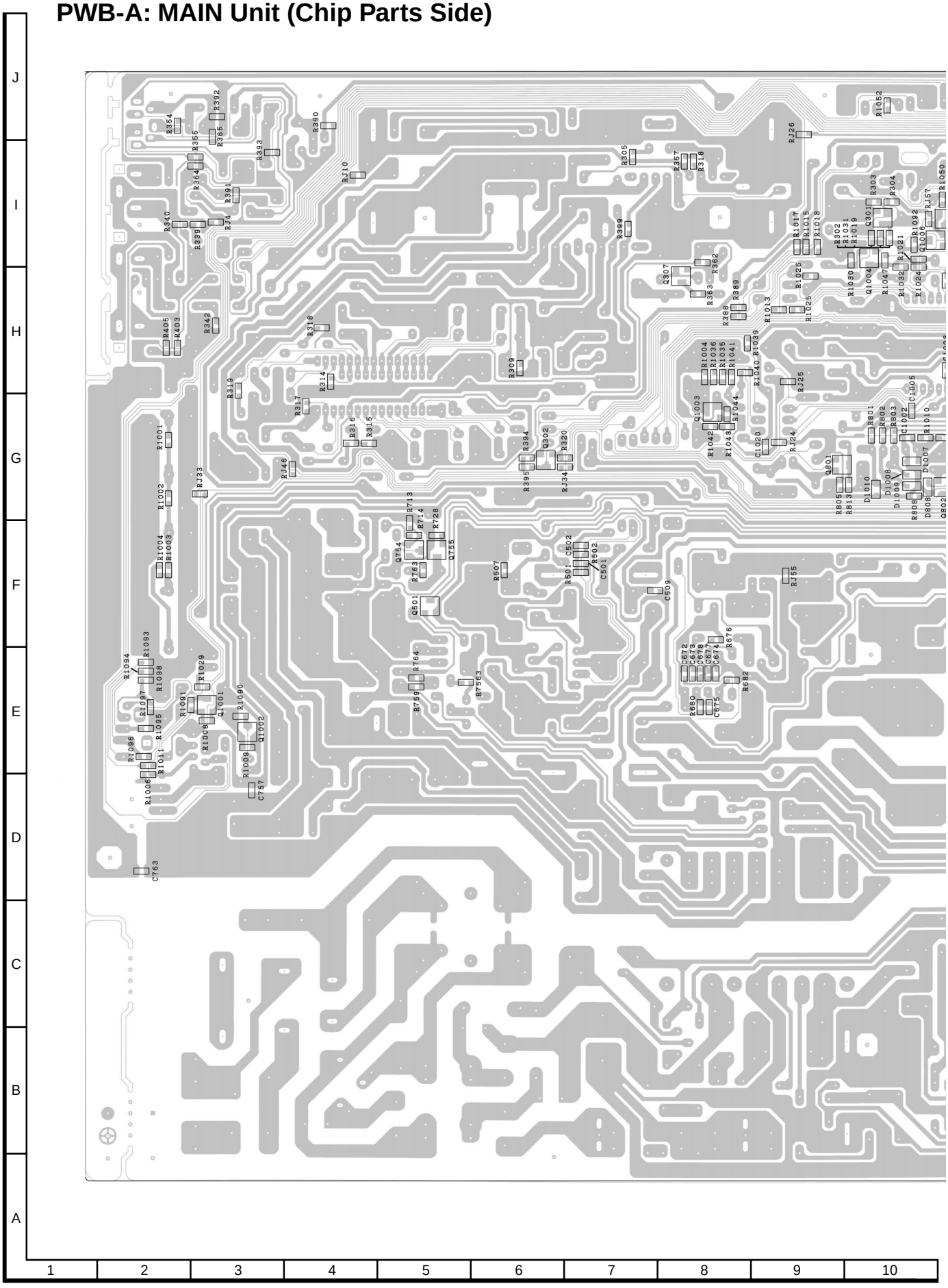
PWB-A: MAIN Unit (Component Side)

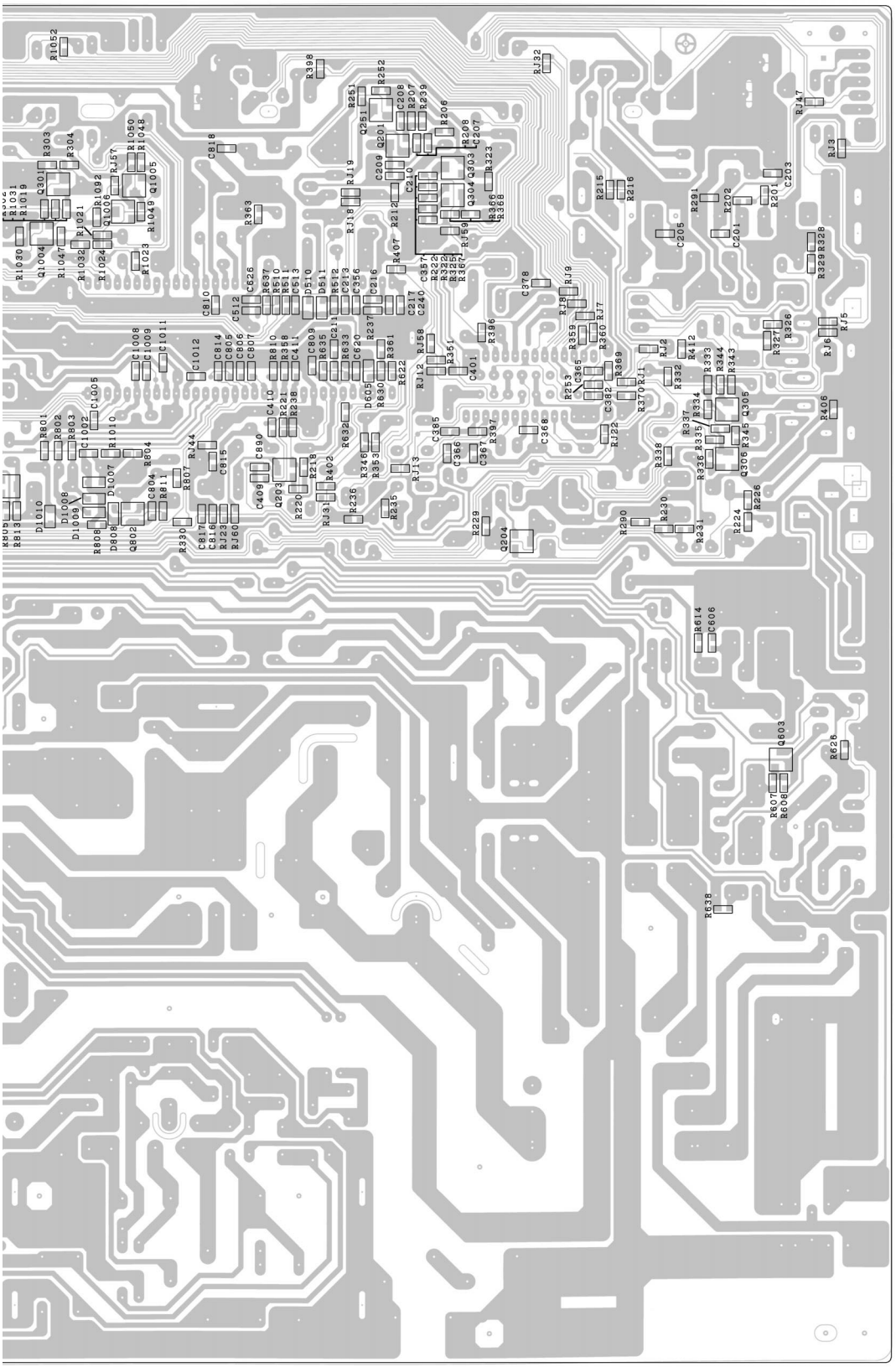




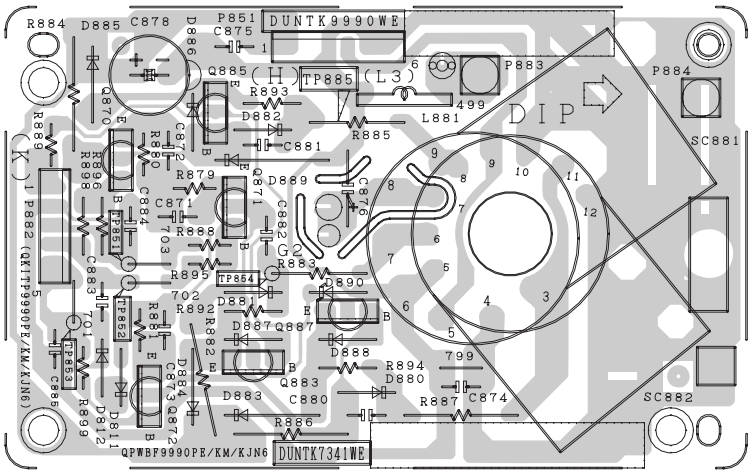
10	11	12	13	14	15	16	17	18	19

PWB-A: MAIN Unit (Chip Parts Side)

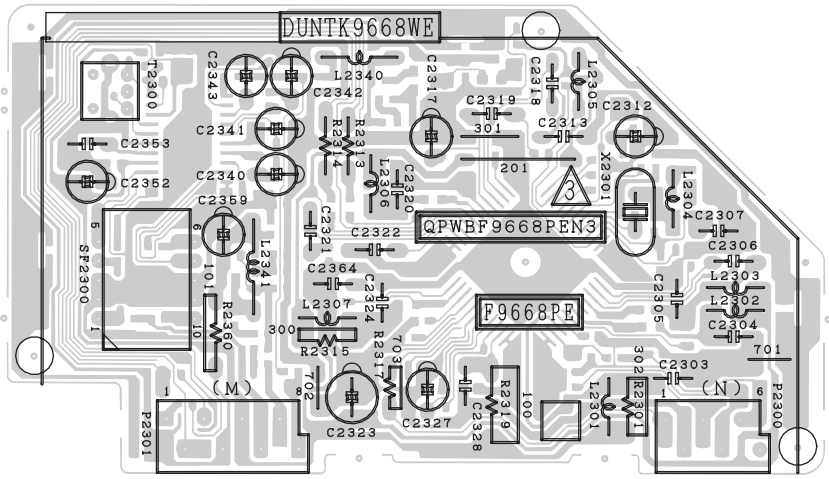




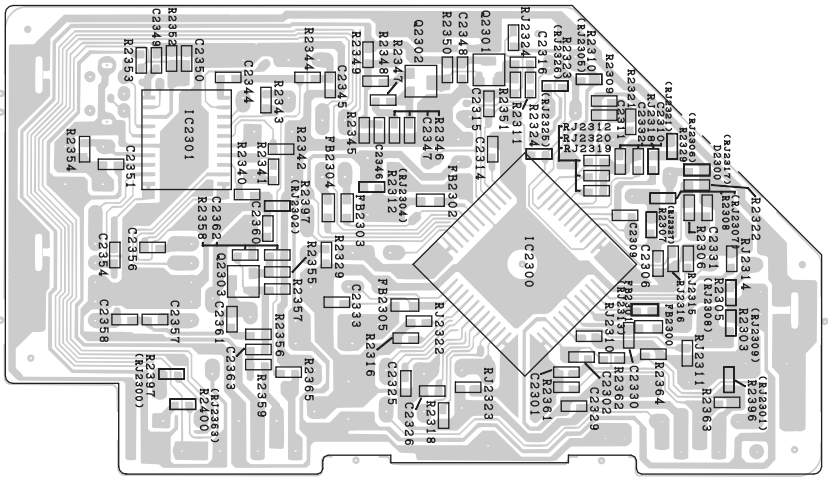
10	11	12	13	14	15	16	17	18	19



PWB-B: CRT Unit (Component Side)

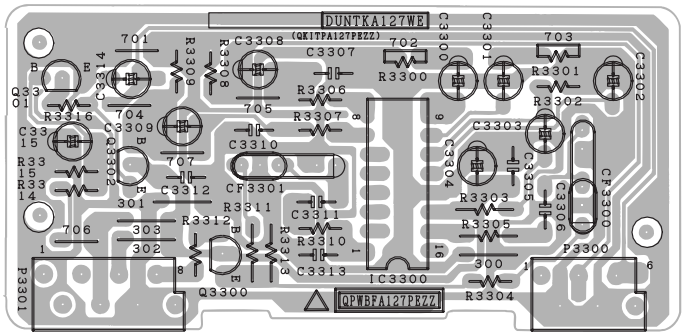


Component Side



Chip Parts Side

PWB-C: NICAM/A2 Unit (21XF50)



PWB-D: MONO-BILLINGUAL Unit (Component Side)

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REPLACEMENT PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "⚠" in the Replacement Parts Lists.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER **2. REF. NO.**
3. PART NO. **4. DESCRIPTION**

MARK ★ : SPARE PARTS-DELIVERY SECTION.

Ref. No.	Part No.	★	Description	Code
PICTURE TUBE				
⚠ V801	VB51LVV896X*S		Picture Tube	
⚠ L708	RCiLG0069PEZZ	R	Degaussing Coil	AR
	RCiLHA018WJZZ	R	Deflection Yoke	AB
	MSPRT0001PEFJ	R	CRT Spring	AC
	QEARC2115CEZZ		Ground-Strap	
	PMAGF3046CEZZ	R	P-Magnet	AF
	PSPAG0004KJZZ	R	Wedge(Rubber), x3	AB
	LHLDW0003PEKZ	R	ADG Coil Holder, x4	AB
PRINTED WIRING BOARD ASSEMBLIES ***(NOT REPLACEMENT ITEM)***				
PWB-A	DUNTKA200WET2	-	Main Unit(21XF30)	—
PWB-A	DUNTKA200WET3	-	Main Unit(21XF50)	—
PWB-B	DUNTK9990WET9	-	CRT Unit	—
PWB-C	DUNTK9668FMT1	-	NICAM/A2 Unit(21XF50)	—
PWB-D	DUNTKA127WET0	-	Mono-Billingual Unit (21XF30)	—
DUNTKA200WET2 PWB-A:MAIN UNIT				
TUNER				
NOTE: THE PARTS HERES SHOWN ARE SUPPLIED AS AN ASSEMBLY NOT INDEPENDENTLY.				
⚠ TU201	VTUVTST5HD970	R	Tuner	AY
INTEGRATED CIRCUITS				
IC302	VHiAN5277//-1	R	AN5277	AN
IC305	VHiAN5891K+-1	R	AN5891K+	AQ
IC401	VHiM52797SP-1	R	M52797SP	AP
IC501	VHiLA7841//-1	R	LA7841	AM
IC605	VHiKA7808AP-1	R	KA7808AP	AE
⚠ IC701	VHiSTRF6654-1	R	STRF6654	AX
IC751	VHiTA48M033-1	R	TA48M033	AH
IC752	VHiKA7805AP-1	R	KA7805AP	AE
IC753	VHiSE120N//-1	R	SE120N	AG
IC801	RH-iX3411CEN5		IX3411CE	
IC1003	VHiM24C08W/-1	R	M24C08W	AH
TRANSISTORS				
Q201	VS2SC2735//1E	R	2SC2735	AC
Q203	VS2PD601AR/-1	R	2PD601AR	AB
Q204	VS2PD601AR/-1	R	2PD601AR	AB
Q251	VS2PD601AR/-1	R	2PD601AR(21XF50)	AB
Q303	VS2PD601AR/-1	R	2PD601AR(21XF50)	AB
Q304	VS2PD601AR/-1	R	2PD601AR	AB
Q305	VS2PD601AR/-1	R	2PD601AR	AB
Q306	VS2PD601AR/-1	R	2PD601AR	AB
Q307	VS2PB709AR/-1	R	2PB709AR	AB
Q501	VS2PD601AR/-1	R	2PD601AR	AB
Q502	VS2PD601AR/-1	R	2PD601AR	AB
Q601	VS2SC2482//-1	R	2SC2482	AD
⚠ Q602	VS2SD2634++-G	R	2SD2634++	AM
⚠ Q603	VS2PD601AR/-1	R	2PD601AR	AB
Q751	VS2SA1015Y/1E	R	2SA1015Y	AC
Q752	VS2SC1815GW-1	R	2SC1815GW	AB
Q753	VS2SC1815GW-1	R	2SC1815GW	AB
Q754	VS2PD601AR/-1	R	2PD601AR	AB
Q755	VS2PD601AR/-1	R	2PD601AR	AB
Q801	VS2PB709AR/-1	R	2PB709AR	AB
Q802	VS2PB709AR/-1	R	2PB709AR	AB
Q1004	VS2PD601AR/-1	R	2PD601AR	AB
Q1005	VS2PD601AR/-1	R	2PD601AR	AB
Q1006	VS2PD601AR/-1	R	2PD601AR	AB
DIODES AND LED'S				
D201	RH-EX0676GEZZ	R	Zener Diode	AA
D252	VHD1SS356//-1	R	1SS356(21XF50)	AB
D301	RH-DX0048GEZZ	R	DX0048GE	AA
D302	RH-EX0615GEZZ	R	Zener Diode	AA
D303	RH-EX0615GEZZ	R	Zener Diode	AA
D304	RH-EX0631GEZZ	R	Zener Diode	AA
D305	RH-EX0631GEZZ	R	Zener Diode	AA
D306	RH-DX0445CEZZ	R	DX0445CE	AL
D309	RH-DX0048GEZZ	R	DX0048GE	AA
D312	RH-DX0048GEZZ	R	DX0048GE	AA
D313	RH-DX0048GEZZ	R	DX0048GE	AA
D314	RH-DX0048GEZZ	R	DX0048GE	AA
D315	RH-DX0048GEZZ	R	DX0048GE	AA
D316	RH-DX0048GEZZ	R	DX0048GE	AA
D320	RH-DX0048GEZZ	R	DX0048GE	AA
D402	RH-EX0631GEZZ	R	Zener Diode	AA
D403	RH-EX0867CEZZ	R	Zener Diode	AC
D404	RH-EX0867CEZZ	R	Zener Diode	AC
D502	RH-EX0654CEZZ	R	Zener Diode	AD
D504	RH-DX0048GEZZ	R	DX0048GE	AA
D505	RH-DX0295CEZZ	R	DX0295CE	AD
D506	RH-DX0295CEZZ	R	DX0295CE	AD
D509	RH-EX0640GEZZ	R	Zener Diode	AA
D512	RH-EX0603GEZZ	R	Zener Diode	AA
D513	RH-DX0048GEZZ	R	DX0048GE	AA
D602	RH-DX0048GEZZ	R	DX0048GE	AA
D603	RH-DX0062CEZZ	R	DX0062CE	AD
D604	RH-EX0627GEZZ	R	Zener Diode	AA
D606	RH-DX0048GEZZ	R	DX0048GE	AA
⚠ D607	RH-EX0658GEZZ	R	Zener Diode	AA
D608	RH-EX0604GEZZ	R	Zener Diode	AB
D609	RH-DX0048GEZZ	R	DX0048GE	AA
⚠ D610	RH-EX0662GEZZ	R	Zener Diode	AB
D611	RH-DX0302CEZZ	R	DX0302CE	AC
D612	RH-DX0302CEZZ	R	DX0302CE	AC
D613	RH-DX0048GEZZ	R	DX0048GE	AA
D614	RH-DX0048GEZZ	R	DX0048GE	AA
D615	RH-DX0048GEZZ	R	DX0048GE	AA
D701	RH-DX0111PEZZ	R	DX0111PE	AG
D702	VHD1SS244//-1	R	1SS244	AB
D705	RH-DX0492CEZZ	R	DX0492CE	AE
D706	VHD1SS244//-1	R	1SS244	AB
D707	VHD1SS244//-1	R	1SS244	AB
D708	RH-DX0400CEZZ	R	DX0400CE	AC
D709	RH-DX0164CEZZ	R	DX0164CE	AC
D710	RH-EX0601GEZZ	R	Zener Diode	AA
D711	VHD1SS244//-1	R	1SS244	AB
D712	VHD1SS244//-1	R	1SS244	AB
D713	RH-EX0621GEZZ	R	Zener Diode	AB

Ref. No.	Part No.	★	Description	Code
D714	RH-DX0055TAZZ	R	DX0055TA	AD
D715	RH-DX0055TAZZ	R	DX0055TA	AD
D718	RH-EX0649GEZZ	R	Zener Diode	AB
D719	RH-EX0649GEZZ	R	Zener Diode	AB
D752	RH-DX0048GEZZ	R	DX0048GE	AA
D753	RH-DX0471CEZZ	R	DX0471CE	AE
D756	RH-DX0471CEZZ	R	DX0471CE	AE
D757	RH-DX0302CEZZ	R	DX0302CE	AC
D758	RH-DX0461CEZZ	R	DX0461CE	AG
D759	RH-EX0716GEZZ	R	Zener Diode	AB
D760	RH-DX0048GEZZ	R	DX0048GE	AA
D761	RH-DX0048GEZZ	R	DX0048GE	AA
D762	VHDTF321S//-1	R	TF321S	AH
D763	RH-DX0471CEZZ	R	DX0471CE	AE
D764	RH-DX0471CEZZ	R	DX0471CE	AE
D765	RH-DX0048GEZZ	R	DX0048GE	AA
D802	RH-DX0048GEZZ	R	DX0048GE	AA
D803	RH-DX0048GEZZ	R	DX0048GE	AA
D804	RH-DX0048GEZZ	R	DX0048GE	AA
D805	RH-DX0048GEZZ	R	DX0048GE	AA
D806	RH-DX0048GEZZ	R	DX0048GE	AA
D808	RH-EX0257TAZZY	R	Zener Diode	AB
D1001	RH-PX0423CEZZ	R	PhotoDiode	AD
D1004	RH-DX0048GEZZ	R	DX0048GE	AA
D1007	RH-EX0867CEZZ	R	Zener Diode	AC
D1008	RH-EX0867CEZZ	R	Zener Diode	AC
D1009	RH-EX0867CEZZ	R	Zener Diode	AC
D1010	RH-EX0867CEZZ	R	Zener Diode	AC
D1011	RH-DX0048GEZZ	R	DX0048GE	AA
D1017	RH-EX0612GEZZ	R	Zener Diode	AA
⚠ IC702	RH-FX0008GEZZ	R	FX0008GE	AE
⚠ VA700	RH-VX0073CEZZ	R	Varistor	AD
PACKAGED CIRCUITS				
PR701	RMPTP0001PEZZ	R	Packaged Circuit	AN
X1001	RCRSB0300CEZZ	R	Crystal	AF
FILTERS				
CF201	RFiLC0024CEZZ	R	Filter, FiLC0024CE (21XF50)	AE
CF202	RFiLC0318CEZZ	R	Filter, FiLC0318CE (21XF50)	AG
CF202	RFiLC0335CEZZ		Filter, FiLC0335CE(21XF30)	
CF203	RFiLC0446CEZZ	R	Filter, FiLC0446CE (21XF50)	AD
COILS				
L202	VP-DF270K0000	R	Peaking, 27µH	AB
L203	VP-DF270K0000	R	Peaking, 27µH	AB
L204	VP-XF1R2M0000	R	Peaking, 1.2µH	AB
L205	VP-DF1R0M0000	R	Peaking, 1µH	AB
L206	VP-DF1R0M0000	R	Peaking, 1µH	AB
L208	VP-XF100K0000	R	Peaking, 10µH(21XF50)	AB
L209	VP-XF6R8K0000	R	Peaking, 6.8µH(21XF50)	AB
L209	VP-XF100K0000	R	Peaking, 10µH(21XF30)	AB
L210	VP-XF120K0000	R	Peaking, 12µH(21XF50)	AB
L211	VP-CF270K0000	R	Peaking, 27µH(21XF50)	AB
L401	VP-DF1R0M0000	R	Peaking, 1µH	AB
L602	RCiLZ1055CEZZ	R	Coil, CiLZ1055CE	AK
L603	RCiLP0225CEZZ	R	Coil, CiLP0225CE	AF
L604	RCiLP0223CEZZ	R	Coil, CiLP0223CE	AE
⚠ L702	RCiLF0019PEZZ	R	Coil, CiLF0019PE	AN
L802	VP-DF100K0000	R	Peaking, 10µH	AB
L803	VP-DF100K0000	R	Peaking, 10µH	AB
L1001	VP-DF100K0000	R	Peaking, 10µH	AB
L1002	VP-DF100K0000	R	Peaking, 10µH	AB
L1003	VP-DF100K0000	R	Peaking, 10µH	AB
SF201	RFiLC0037PEZZ	R	Filter(21XF50)	AP
SF201	RFiLC0442CEZZ	R	Filter(21XF30)	AL
TRANSFORMERS				
⚠ T601	RTRNZ0731CEZZ	R	Transformer	AG
⚠ T602	RTRNF0202PEZZ	R	H-Volt Transformer	BA
⚠ T701	RTRNZ0193PEZZ	R	Transformer	AQ

Ref. No.	Part No.	★			Description	Code
CAPACITORS						
C200	VCEA0A1CW476M	R	47	16V	Electrolytic	AB
C203	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C204	VCEA0A1CW108M	R	1000	16V	Electrolytic	AD
C205	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C206	VCEA0A1HW106M	R	10	50V	Electrolytic	AB
C207	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C208	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C209	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C210	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C211	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C212	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C213	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C214	VCEA0A1CW226M	R	22	16V	Electrolytic	AB
C216	VCKYCY1HB821K	R	820p	50V	Ceramic	AA
C217	VCKYCY1HB472K	R	4700p	50V	Ceramic	AA
C218	VCKYCY1HF103Z	R	0.01 (21XF50)	50V	Ceramic	AA
C306	VCEA0A1EW107M	R	100	25V	Electrolytic	AC
C307	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C308	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C309	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C310	VCEA0A1CW336M	R	33	16V	Electrolytic	AB
C311	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C312	VCQYTA1HM102J	R	1000p	50V	Mylar	AA
C313	VCQYTA1HM102J	R	1000p	50V	Mylar	AA
C314	VCEA0A1VW108M	R	1000	35V	Electrolytic	AD
C315	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C316	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C317	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C319	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C322	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C323	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C327	VCQYTA1HM103J	R	0.01	50V	Mylar	AA
C328	VCEA0A1HW104M	R	0.1	50V	Electrolytic	AB
C329	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C330	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C331	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C332	VCEA0A1VW108M	R	1000	35V	Electrolytic	AD
C333	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C337	VCQYTA1HM392J	R	3900p	50V	Mylar	AA
C338	VCQYTA1HM103J	R	0.01	50V	Mylar	AA
C339	VCQYTA1HM333J	R	0.033	50V	Mylar	AA
C340	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C341	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C342	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C343	VCQYTA1HM103J	R	0.01	50V	Mylar	AA
C344	VCEA0A1HW104M	R	0.1	50V	Electrolytic	AB
C346	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C347	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C348	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C349	VCEA0A1CW107M	R	100	16V	Electrolytic	AC
C350	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C352	VCQYTA1HM103J	R	0.01	50V	Mylar	AA
C355	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C356	VCKYCY1HB682K	R	6800p	50V	Ceramic	AA
C357	VCKYCY1HB182K	R	1800p (21XF50)	50V	Ceramic	AA
C359	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C361	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C362	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C363	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C364	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C365	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C366	VCKYCY1HB102K	R	1000p (21XF30)	50V	Ceramic	AA
C367	VCCCCY1HH221J	R	220p	50V	Ceramic	AA
C368	VCCCCY1HH221J	R	220p	50V	Ceramic	AA
C369	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C370	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C371	VCEA0A1CW476M	R	47	16V	Electrolytic	AB
C372	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C375	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C376	VCEA0A1CW106M	R	10 (21XF50)	16V	Electrolytic	AB
C380	VCQYTA1HM333J	R	0.033	50V	Mylar	AA
C381	VCEA0A1HW105M	R	1	50V	Electrolytic	AB

Ref. No.	Part No.	★			Description	Code
C382	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C383	VCEA0A1CW227M	R	220	16V	Electrolytic	AC
C384	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C385	VCKYCY1HB102K	R	1000p	50V	Ceramic (21XF30)	AA
C386	VCFYFA1HA394J	R	0.39	50V	Mylar	AC
C387	VCFYFA1HA394J	R	0.39	50V	Mylar	AC
C390	VCKYCY1HB102K	R	1000p	50V	Ceramic (21XF50)	AA
C391	VCKYCY1HB102K	R	1000p	50V	Ceramic (21XF50)	AA
C401	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C402	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C403	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C404	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C405	VCEA0A1CW107M	R	100	16V	Electrolytic	AC
C406	VCEA0A1CW477M	R	470	16V	Electrolytic	AC
C407	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C408	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C409	VCKYCY1CF474Z	R	0.47	16V	Ceramic	AB
C410	VCKYCY1CF474Z	R	0.47	16V	Ceramic	AB
C411	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C412	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C501	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C502	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C503	VCQYTA2AA563K	R	0.056	100V	Mylar	AB
C504	RC-FZ0272CEZZ	R	0.39	100V	Mylar	AD
C505	VCEA0A1HW107M	R	100	50V	Electrolytic	AB
C506	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C507	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C508	VCKYPA1HB102K	R	1000p	50V	Ceramic	AA
C509	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C512	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C513	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C515	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C516	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C517	VCQYTA1HM104J	R	0.1	50V	Mylar	AA
C518	VCKYCY1CB333K	R	0.033	16V	Ceramic	AA
C601	VCEA0A2EW106M	R	10	250V	Electrolytic	AD
C602	VCQYTA1HM104J	R	0.1	50V	Mylar	AA
⚠ C603	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
⚠ C604	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
⚠ C605	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C606	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C607	VCEA0A1CW477M	R	470	16V	Electrolytic	AC
C608	VCEA0A1EW476M	R	47	25V	Electrolytic	AB
C609	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C611	VCKYPA2HB561K	R	560p	500V	Ceramic	AA
C612	RC-EZ0724CEZZ	R	100	160V	Electrolytic	AG
C613	RC-FZ0332CEZZ	R	0.3	250V	Metallized Polypro Film	AF
C615	VCFPVC2DB224J	R	0.22	200V	Metallized Polypro Film	AE
⚠ C616	VCFPVC3ZA103H	R	0.01	1800V	Metallized Polypro Film	AD
C617	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C618	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C619	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C620	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C622	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C623	VCQYTA1HM222J	R	2200p	50V	Mylar	AA
C624	VCQYTA1HM472J	R	4700p	50V	Mylar	AB
C625	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C626	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C627	VCEA0A1HW106M	R	10	50V	Electrolytic	AB
C629	VCKYPA1HB472K	R	4700p	50V	Ceramic	AA
⚠ C630	RC-KZ0038CEZZ	R	470p	2kV	Ceramic	AB
C650	VCEA0A1HW224M	R	0.22	50V	Electrolytic	AB
C700	VCFYAA2AA103J	R	0.01	100V	Metallized Polypro Film	AF
⚠ C701	RC-FZ031SCEZZ	R	0.1	AC250V	Metallized Polypro Film	AD
C702	RC-KZ0029CEZZ	R	0.01	250V	Ceramic	AC
C703	RC-KZ0029CEZZ	R	0.01	250V	Ceramic	AC
C704	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C705	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C707	RC-EZ0804CEZZ	R	220	400V	Electrolytic	AU
C708	RC-KZ0029CEZZ	R	0.01	250V	Ceramic	AC
C709	VCQYTA1HM471J	R	470p	50V	Mylar	AB
C711	RC-KZ0039CEZZ	R	680p	2kV	Ceramic	AB
C712	VCQYTA1HM102J	R	1000p	50V	Mylar	AA
C713	RC-KZ007JCEZZ	R	0.01	250V	Ceramic	AC
C714	VCKYPH3DB561K	R	560p	2kV	Ceramic	AC
C715	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C716	VCEA0A1EW226M	R	22	25V	Electrolytic	AB
C717	VCQYTA1HM272J	R	2700p	50V	Mylar	AA
C718	VCEA0A2AW475M	R	4.7	100V	Electrolytic	AB
⚠ C721	RC-KZ0102GEZZ	R	680p	4kV	Ceramic	AE
C751	VCEA0A1EW476M	R	47	25V	Electrolytic	AB
C752	VCEA0A0JW227M	R	220	6.3V	Electrolytic	AB
C753	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C754	VCEA0A1CW476M	R	47	16V	Electrolytic	AB
C755	VCEA0A1CW108M	R	1000	16V	Electrolytic	AD
C756	VCEAGH1CW338M	R	3300	16V	Electrolytic	AE
C758	VCKYPA2HB221K	R	220p	500V	Ceramic	AA
C759	VCKYPA1HB102K	R	1000p	50V	Ceramic	AA
C760	RC-KZ0039CEZZ	R	680p	2kV	Ceramic	AB
C761	RC-EZ0006PEZZ	R	220	160V	Electrolytic	AK
C762	VCQYTA1HM473J	R	0.047	50V	Mylar	AA
C801	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C802	VCEA0A1CW337M	R	330	16V	Electrolytic	AC
C803	VCEA0A1CW107M	R	100	16V	Electrolytic	AC
C804	VCKYCY1HB222K	R	2200p	50V	Ceramic	AA
C805	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C806	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C807	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C808	VCEA0A1CW107M	R	100	16V	Electrolytic	AC
C809	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C810	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C811	VCEA0A1CW107M	R	100	16V	Electrolytic	AC
C812	VCFYFA1HA224J	R	0.22	50V	Mylar	AB
C813	VCFYFA1HA224J	R	0.22	50V	Mylar	AB
C814	VCKYCY1HB471K	R	470p	50V	Ceramic	AA
C815	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C816	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C818	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C1001	VCEA0A0JW107M	R	100	6.3V	Electrolytic	AB
C1003	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C1004	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C1005	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C1006	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C1008	VCCCCY1HH330J	R	33p	50V	Ceramic	AA
C1009	VCCCCY1HH330J	R	33p	50V	Ceramic	AA
C1010	VCEA0A0JW107M	R	100	6.3V	Electrolytic	AB
C1011	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C1012	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C1013	VCEA0A0JW107M	R	100	6.3V	Electrolytic	AB
C1014	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C1016	VCQYTA1HM104J	R	0.1	50V	Mylar	AA
C1017	VCFYFA1HA474J	R	0.47	50V	Mylar	AC
C1020	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C1021	VCEA0A0JW227M	R	220	6.3V	Electrolytic	AB
C1025	VCEA0A0JW107M	R	100	6.3V	Electrolytic	AB

RESISTORS

RJ1	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ2	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ3	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ5	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ6	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ7	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ8	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ9	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ10	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ12	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ22	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ24	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ25	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ26	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ31	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ33	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ34	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ44	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ46	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
RJ47	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ55	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ57	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ60	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ64	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ65	VRS-CY1JF000J	R	0 1/16W Metal Oxide (21XF50)	AA
R201	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R202	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R203	VRD-RM2HD472J	R	4.7k 1/2W Carbon	AA
R204	VRD-RM2HD472J	R	4.7k 1/2W Carbon	AA
R205	VRD-RA2BE680J	R	68 1/8W Carbon	AA
R206	VRS-CY1JF122J	R	1.2k 1/16W Metal Oxide	AA
R207	VRS-CY1JF221J	R	220 1/16W Metal Oxide	AA
R208	VRS-CY1JF271J	R	270 1/16W Metal Oxide	AA
R209	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
R210	VRD-RM2HD472J	R	4.7k 1/2W Carbon	AA
R211	VRD-RA2BE682J	R	6.8k 1/8W Carbon (21XF50)	AA
R212	VRS-CY1JF392J	R	3.9k 1/16W Metal Oxide (21XF50)	AA
R215	VRS-CY1JF681J	R	680 1/16W Metal Oxide (21XF50)	AA
R216	VRS-CY1JF681J	R	680 1/16W Metal Oxide (21XF30)	AA
R217	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
R218	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R219	VRS-CY1JF391J	R	390 1/16W Metal Oxide	AA
R220	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R221	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R222	VRS-CY1JF681J	R	680 1/16W Metal Oxide	AA
R223	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R224	VRS-CY1JF750J	R	75 1/16W Metal Oxide	AA
R225	VRD-RA2EE680J	R	68 1/4W Carbon	AA
R229	VRS-CY1JF680J	R	68 1/16W Metal Oxide	AA
R230	VRS-CY1JF102J	R	1k 1/16W Metal Oxide (21XF50)	AA
R230	VRS-CY1JF561J	R	560 1/16W Metal Oxide (21XF30)	AA
R231	VRS-CY1JF102J	R	1k 1/16W Metal Oxide (21XF50)	AA
R231	VRS-CY1JF561J	R	560 1/16W Metal Oxide (21XF30)	AA
R232	VRD-RA2BE680J	R	68 1/8W Carbon (21XF50)	AA
R233	VRD-RA2BE181J	R	180 1/8W Carbon	AA
R234	VRD-RA2BE331J	R	330 1/8W Carbon (21XF50)	AA
R235	VRS-CY1JF561J	R	560 1/16W Metal Oxide (21XF50)	AA
R236	VRS-CY1JF681J	R	680 1/16W Metal Oxide (21XF50)	AA
R237	VRS-CY1JF272J	R	2.7k 1/16W Metal Oxide	AA
R238	VRS-CY1JF821J	R	820 1/16W Metal Oxide	AA
R239	VRS-CY1JF221J	R	220 1/16W Metal Oxide	AA
R240	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R251	VRS-CY1JF472J	R	4.7k 1/16W Metal Oxide (21XF50)	AA
R252	VRS-CY1JF472J	R	4.7k 1/16W Metal Oxide (21XF50)	AA
R253	VRS-CY1JF472J	R	4.7k 1/16W Metal Oxide (21XF50)	AA
R290	VRS-CY1JF000J	R	0 1/16W Metal Oxide (21XF30)	AA
R291	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
R300	VRD-RM2HD680J	R	68 1/2W Carbon	AA
R301	VRD-RM2HD680J	R	68 1/2W Carbon	AA
R306	VRD-RA2BE153J	R	15k 1/8W Carbon	AA
R307	VRD-RA2BE822J	R	8.2k 1/8W Carbon	AA
R308	VRD-RA2BE562J	R	5.6k 1/8W Carbon	AA
R309	VRS-CY1JF822J	R	8.2k 1/16W Metal Oxide	AA
R310	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R311	VRD-RA2BE562J	R	5.6k 1/8W Carbon	AA
R312	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R313	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R314	VRS-CY1JF224J	R	220k 1/16W Metal Oxide	AA
R315	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R316	VRS-CY1JF332J	R	3.3k 1/16W Metal Oxide	AA
R318	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R319	VRS-CY1JF332J	R	3.3k 1/16W Metal Oxide	AA
R322	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R323	VRS-CY1JF103J	R	10k 1/16W Metal Oxide (21XF50)	AA
R324	VRD-RA2BE103J	R	10k 1/8W Carbon (21XF50)	AA
R325	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R326	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R327	VRS-CY1JF564J	R	560k 1/16W Metal Oxide	AA
R328	VRS-CY1JF564J	R	560k 1/16W Metal Oxide	AA
R329	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R332	VRS-CY1JF561J	R	560 1/16W Metal Oxide	AA
R333	VRS-CY1JF103J	R	10k 1/16W Metal Oxide	AA
R334	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R335	VRS-CY1JF561J	R	560 1/16W Metal Oxide	AA
R336	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R337	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R338	VRS-CY1JF103J	R	10k 1/16W Metal Oxide	AA
R339	VRS-CY1JF564J	R	560k 1/16W Metal Oxide	AA
R340	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R341	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R342	VRS-CY1JF564J	R	560k 1/16W Metal Oxide	AA
R343	VRS-CY1JF104J	R	100k 1/16W Metal Oxide	AA
R344	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R345	VRS-CY1JF104J	R	100k 1/16W Metal Oxide	AA
R351	VRS-CY1JF000J	R	0 1/16W Metal Oxide (21XF50)	AA
R354	VRS-CY1JF471J	R	470 1/16W Metal Oxide	AA
R355	VRS-CY1JF471J	R	470 1/16W Metal Oxide	AA
R356	VRD-RA2BE103J	R	10k 1/8W Carbon (21XF50)	AA
R358	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R359	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R360	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R362	VRS-CY1JF123J	R	12k 1/16W Metal Oxide	AA
R363	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R367	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
R368	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
R369	VRS-CY1JF332J	R	3.3k 1/16W Metal Oxide	AA
R370	VRS-CY1JF332J	R	3.3k 1/16W Metal Oxide	AA
R379	VRN-VV3LB1R5J	R	1.5 3W Metal Film	AC
R388	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R389	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R391	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
R397	VRS-CY1JF000J	R	0 1/16W Metal Oxide (21XF50)	AA
R398	VRS-CY1JF000J	R	0 1/16W Metal Oxide (21XF30)	AA
R401	VRD-RA2BE103J	R	10k 1/8W Carbon (21XF50)	AA
R403	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R404	VRD-RA2EE750J	R	75 1/4W Carbon	AA
R405	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
R406	VRS-CY1JF103J	R	10k 1/16W Metal Oxide	AA
R411	VRD-RA2EE750J	R	75 1/4W Carbon	AA
R412	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R501	VRS-CY1JF181J	R	180 1/16W Metal Oxide	AA
R502	VRS-CY1JF181J	R	180 1/16W Metal Oxide	AA
R504	VRD-RA2BE1R0J	R	1 1/8W Carbon	AA
R506	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R508	VRS-VV3DB331J	R	330 2W Metal Oxide	AA
R510	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R511	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R513	VRD-RA2BE393J	R	39k 1/8W Carbon	AA
R515	VRD-RA2BE153J	R	15k 1/8W Carbon	AA
R516	VRD-RA2BE153J	R	15k 1/8W Carbon	AA
R517	VRD-RA2BE392G	R	3.9k 1/8W Carbon	AA
R518	VRN-VV3DB2R7J	R	2.7 2W Metal Film	AB
R519	VRD-RM2HD102J	R	1k 1/2W Carbon	AA
R520	VRD-RM2HD100J	R	10 1/2W Carbon	AA
R521	VRS-CY1JF104J	R	100k 1/16W Metal Oxide	AA
R522	VRS-CY1JF392J	R	3.9k 1/16W Metal Oxide	AA
R560	VRD-RA2BE123J	R	12k 1/8W Carbon	AA
R561	VRD-RA2BE103J	R	10k 1/8W Carbon	AA
⚠ R601	RR-XZ0084CEZZ	R	1 1/4W Fuse Resistor	AB

Ref. No.	Part No.	★	Description			Code
R602	VRN-RV3ABR82J	R	0.82	1W	Metal Film	AB
R603	VRD-RM2HD102J	R	1k	1/2W	Carbon	AA
R604	VRD-RA2BE393J	R	39k	1/8W	Carbon	AA
R605	VRD-RM2HD101J	R	100	1/2W	Carbon	AA
R606	VRD-RA2BE333J	R	33k	1/8W	Carbon	AA
⚠ R607	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
⚠ R608	VRS-CY1JF123J	R	12k	1/16W	Metal Oxide	AA
R609	VRD-RA2BE153G	R	15k	1/8W	Carbon	AA
R610	VRD-RA2BE822G	R	8.2k	1/8W	Carbon	AA
R611	VRD-RA2EE563G	R	56k	1/4W	Carbon	AA
R612	VRD-RA2BE103J	R	10k	1/8W	Carbon	AA
R613	VRD-RA2BE103J	R	10k	1/8W	Carbon	AA
R614	VRS-CY1JF103J	R	10k	1/16W	Metal Oxide	AA
R615	VRS-KT3LB272J	R	2.7k	3W	Metal Oxide	AC
R616	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R617	VRS-VV3AB562J	R	5.6k	1W	Metal Oxide	AA
R618	VRS-KA3NG3R3K	R	3.3	7W	Metal Oxide	AD
R619	VRD-RM2HD682J	R	6.8k	1/2W	Carbon	AA
R620	VRD-RM2HD150J	R	15	1/2W	Carbon	AA
R622	VRS-KT3LB122J	R	1.2k	3W	Metal Oxide	AC
R624	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R625	VRD-RM2HD184J	R	180k	1/2W	Carbon	AA
R626	VRS-CY1JF472J	R	4.7k	1/16W	Metal Oxide	AA
R628	VRD-RM2HD820J	R	82	1/2W	Carbon	AA
R630	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
R631	VRS-CY1JF391J	R	390	1/16W	Metal Oxide	AA
R632	VRS-CY1JF273J	R	27k	1/16W	Metal Oxide	AA
R633	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R635	VRS-CY1JF822J	R	8.2k	1/16W	Metal Oxide	AA
R636	VRS-CY1JF223J	R	22k	1/16W	Metal Oxide	AA
R638	VRS-CY1JF103J	R	10k	1/16W	Metal Oxide	AA
R675	VRS-VV3LB331J	R	330	3W	Metal Oxide	AB
R701	VRW-KQ41C3R3K	R	3.3	15W	Cement	AG
R703	VRS-KT3LB473J	R	47k	3W	Metal Oxide	AE
⚠ R704	VRG-PD2HD150J	R	15	1/2W	Fuse Resistor	AC
R705	VRD-RA2BE122J	R	1.2k	1/8W	Carbon	AA
R706	VRD-RM2HD152J	R	1.5k	1/2W	Carbon	AA
R707	VRS-KT3LB473J	R	47k	3W	Metal Oxide	AE
R708	VRD-RM2HD272J	R	2.7k	1/2W	Carbon	AA
R709	VRD-RA2BE681J	R	680	1/8W	Carbon	AA
R710	VRN-VV3ABR27J	R	0.27	1W	Metal Film	AA
R711	VRN-VV3ABR27J	R	0.27	1W	Metal Film	AA
⚠ R712	VRG-PD2HD150J	R	15	1/2W	Fuse Resistor	AC
R713	VRS-CY1JF103J	R	10k	1/16W	Metal Oxide	AA
R714	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R715	VRD-RA2BE331J	R	330	1/8W	Carbon	AA
R717	VRD-RM2HD124J	R	120k	1/2W	Carbon	AA
R718	VRD-RM2HD124J	R	120k	1/2W	Carbon	AA
⚠ R719	VRC-UA2HG825K	R	8.2M	1/2W	Solid	AA
R721	VRD-RA2BE393J	R	39k	1/8W	Carbon	AA
R722	VRD-RM2HD124J	R	120k	1/2W	Carbon	AA
R723	VRD-RM2HD684J	R	680k	1/2W	Carbon	AA
⚠ R726	VRC-UA2HG825K	R	8.2M	1/2W	Solid	AA
R728	VRS-CY1JF272J	R	2.7k	1/16W	Metal Oxide	AA
R751	VRS-VV3LB120J	R	12	3W	Metal Oxide	AB
R752	VRD-RA2BE682J	R	6.8k	1/8W	Carbon	AA
R753	VRS-KT3LB472J	R	4.7k	3W	Metal Oxide	AC
R755	VRD-RA2BE222J	R	2.2k	1/8W	Carbon	AA
R756	VRS-CY1JF152J	R	1.5k	1/16W	Metal Oxide	AA
R757	VRD-RA2BE182J	R	1.8k	1/8W	Carbon	AA
R758	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R759	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R760	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R761	VRD-RA2BE221J	R	220	1/8W	Carbon	AA
R763	VRS-CY1JF152J	R	1.5k	1/16W	Metal Oxide	AA
R764	VRS-CY1JF272J	R	2.7k	1/16W	Metal Oxide	AA
R767	VRD-RA2BE272J	R	2.7k	1/8W	Carbon	AA
R768	VRD-RA2BE561J	R	560	1/8W	Carbon	AA
R801	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R802	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R803	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R804	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R805	VRS-CY1JF822J	R	8.2k	1/16W	Metal Oxide	AA
R806	VRD-RA2BE123J	R	12k	1/8W	Carbon	AA
R807	VRS-CY1JF103J	R	10k	1/16W	Metal Oxide	AA
R808	VRS-CY1JF221J	R	220	1/16W	Metal Oxide	AA
R809	VRD-RA2BE394J	R	390k	1/8W	Carbon	AA
R810	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
R812	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R813	VRS-CY1JF221J	R	220	1/16W	Metal Oxide	AA
R890	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
R1001	VRS-CY1JF221J	R	220	1/16W	Metal Oxide	AA
R1002	VRS-CY1JF331J	R	330	1/16W	Metal Oxide	AA
R1003	VRS-CY1JF471J	R	470	1/16W	Metal Oxide	AA
R1004	VRS-CY1JF821J	R	820	1/16W	Metal Oxide	AA
R1005	VRD-RA2BE181J	R	180	1/8W	Carbon	AA
R1006	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
R1011	VRS-CY1JF820J	R	82	1/16W	Metal Oxide	AA
R1012	VRD-RA2BE391J	R	390	1/8W	Carbon	AA
R1013	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1014	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1015	VRS-CY1JF332J	R	3.3k	1/16W	Metal Oxide	AA
R1016	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1017	VRS-CY1JF332J	R	3.3k	1/16W	Metal Oxide	AA
R1019	VRS-CY1JF472J	R	4.7k	1/16W	Metal Oxide	AA
R1020	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1021	VRS-CY1JF153J	R	15k	1/16W	Metal Oxide	AA
R1022	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1023	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1024	VRS-CY1JF122J	R	1.2k	1/16W	Metal Oxide	AA
R1025	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1026	VRS-CY1JF224J	R	220k	1/16W	Metal Oxide	AA
R1027	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1028	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1030	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R1031	VRS-CY1JF562J	R	5.6k	1/16W	Metal Oxide	AA
R1032	VRS-CY1JF332J	R	3.3k	1/16W	Metal Oxide	AA
R1033	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R1034	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1035	VRS-CY1JF332J	R	3.3k	1/16W	Metal Oxide	AA
R1036	VRS-CY1JF332J	R	3.3k	1/16W	Metal Oxide	AA
R1037	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1038	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1040	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1041	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1045	VRD-RA2BE271J	R	270	1/8W	Carbon	AA
R1046	VRD-RA2BE103J	R	10k	1/8W	Carbon	AA
R1048	VRS-CY1JF103J	R	10k	1/16W	Metal Oxide	AA
R1049	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1050	VRS-CY1JF102J	R	1k	1/16W	Metal Oxide	AA
R1052	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R1053	VRS-CY1JF101J	R	100	1/16W	Metal Oxide	AA
R1054	VRD-RM2HD271J	R	270	1/2W	Carbon	AA
R1058	VRD-RA2BE103J	R	10k (21XF30)	1/8W	Carbon	AA
R1058	VRS-CY1JF103J	R	10k (21XF50)	1/16W	Metal Oxide	AA
R1090	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
R1091	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
R1095	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
R1096	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
R1098	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA

BALUNES

FB305	RBLN-0091GEZZ	R	Balun, BLN-0091GE	AB
FB603	RBLN-0047CEZZ	R	Balun, BLN-0047CE	AB
FB701	RBLN-0091GEZZ	R	Balun, BLN-0091GE	AB
FB702	RBLN-0091GEZZ	R	Balun, BLN-0091GE	AB
FB751	RBLN-0091GEZZ	R	Balun, BLN-0091GE	AB
FB752	RBLN-0091GEZZ	R	Balun, BLN-0091GE	AB

SWITCHES

⚠ S701	QSW-P0591CEZZ	R	Switch	AQ
S1001	QSW-K0003AJZZ	R	Switch, CH Up	AB
S1002	QSW-K0003AJZZ	R	Switch, CH Down	AB
S1003	QSW-K0003AJZZ	R	Switch, Vol Up	AB
S1004	QSW-K0003AJZZ	R	Switch, VOL Down	AB
S1005	QSW-K0003AJZZ	R	Switch, Menu	AB

MISCELLANEOUS PARTS

CN601	QCNW-2447PEZZ	R	Connecting Cord	AF

Ref. No.	Part No.	★	Description	Code
CN801	QCNW-2446PEZZ	R	Connecting Cord	AF
⚠ FH701	QFSHD1013CEZZ	R	Fuse Holder	AC
⚠ FH702	QFSHD1014CEZZ	R	Fuse Holder	AC
⚠ F301	QFS-J2521CEZZ	R	Fuse	AF
⚠ F701	QFS-C3229CEZZ	R	Fuse, 3.15A 250V	AD
J351	QJAKJ0101SEZZ	R	Jack	AE
J405	QTANJ0644CEZZ	R	Terminal	AM
J408	QJAKG0074CEZZ	R	Jack	AF
P301	QPLGN0461CEZZ	R	Plug, 4Pin	AB
P501	QPLGN0160FJZZ	R	Plug, 5Pin	AD
P601	QPLGN0661CEZZ	R	Plug, 6Pin	AD
P701	QPLGN0260CEZZ	R	Plug, 2Pin	AC
P702	QPLGN0269GEZZ	R	Plug, 2Pin	AB
P1001	QPLGN0561CEZZ	R	Plug, 5Pin	AB
P1002	QPLGN0661CEZZ	R	Plug, 6Pin	AD
RDA301	PRDAR0299PEFW	R	Heat Sink, IC302	AH
RDA302	PRDAR0160PEFW	R	Heat Sink, D306	AF
RDA501	PRDAR0280PEFW	R	Heat Sink, IC501	AF
RDA601	PRDAR0224PEFW	R	Heat Sink, Q602	AF
RDA700	PRDAR0305PEFW	R	Heat Sink, IC701	AK
RMC1001	RRMCU0222CEZZ	R	Remote Receiver	AL
TP201	QLUGP0102PEZZ	R	Lug	AA
TP202	QLUGP0102PEZZ	R	Lug(21XF50)	AA
	LHLDP1066PE00	R	Holder	AC

DUNTK9990WET9
PWB-B:CRT UNIT

TRANSISTORS

Q870	RH-TX0110BMZZ+	R	TX0110BM	AC
Q871	RH-TX0110BMZZ+	R	TX0110BM	AC
Q872	RH-TX0110BMZZ+	R	TX0110BM	AC
Q883	VSBF421////-1	R	F421	AC
Q885	VSBF421////-1	R	F421	AC
Q887	VSBF421////-1	R	F421	AC

DIODES

D811	RH-DX0048GEZZ	R	DX0048GE	AA
D812	RH-DX0048GEZZ	R	DX0048GE	AA
D880	VHD1SS82///1A	R	1SS82	AC
D881	VHD1SS82///1A	R	1SS82	AC
D882	VHD1SS82///1A	R	1SS82	AC

CAPACITORS

C871	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C872	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C873	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C875	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C876	RC-KZ0150CEZZ	R	1000p	3kV	Ceramic	AB
C878	VCEAGA2EW336M	R	33	250V	Electrolytic	AD
C880	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C881	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C882	VCKYPA1HB471K	R	470p	50V	Ceramic	AA

RESISTORS

R879	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R880	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R881	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R882	VRS-VV3DB153J	R	15k	2W	Metal Oxide	AA
R883	VRD-RM2HD272J	R	2.7k	1/2W	Carbon	AA
R884	VRS-VV3DB153J	R	15k	2W	Metal Oxide	AA
R885	VRD-RM2HD272J	R	2.7k	1/2W	Carbon	AA
R886	VRS-VV3DB153J	R	15k	2W	Metal Oxide	AA
R887	VRD-RM2HD272J	R	2.7k	1/2W	Carbon	AA
R892	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R893	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R894	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R895	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R896	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R899	VRD-RA2BE471J	R	470	1/8W	Carbon	AA

MISCELLANEOUS PARTS

P851	QPLGN0661CEZZ	R	Plug, 6Pin	AD
P882	QPLGN0561CEZZ	R	Plug, 5Pin	AB
⚠ SC882	QSOCV0016PEZZ	R	Socket, 11Pin	AF

DUNTK9668WET1
PWB-C:NICAM/A2 UNIT(21XF50)

INTEGRATED CIRCUITS

IC2300	VHiTDA9874A-1	R	TDA9874A	BB
IC2301	VHiTDA9808T-1	R	TDA9808T	AR

TRANSISTORS

Q2301	VS2PD601AR/-1	R	2PD601AR	AB
Q2302	VS2SC2735//1E	R	2SC2735	AC
Q2303	VS2SC2735//1E	R	2SC2735	AC

PACKAGED CIRCUITS

X2301	RCRSB0295CEZZ	R	Crystal, CRSB0295CE	AH

FILTER

SF2300	RFiLC0016PEZZ	R	Filter, FiLC0016PE	AS

COILS

L2340	VP-XF220K0000	R	Peaking, 22µH	AB
L2341	VP-XF1R2M0000	R	Peaking, 1.2µH	AB
T2300	RCiLD0231CEZZ	R	Detection Coil	AF

CAPACITORS

C2301	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2302	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2303	VCFYFA1HA474J	R	0.47	50V	Mylar	AC
C2304	VCFYFA1HA474J	R	0.47	50V	Mylar	AC
C2313	VCFYFA1HA474J	R	0.47	50V		AC
C2314	VCCCCY1HH470J	R	47p	50V	Ceramic	AA
C2315	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2316	VCCCCY1HH470J	R	47p	50V	Ceramic	AA
C2317	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C2320	VCFYFA1HA474J	R	0.47	50V	Mylar	AC
C2323	VCEA0A1CW107M	R	100	16V	Electrolytic	AC
C2324	VCFYFA1HA474J	R	0.47	50V	Mylar	AC
C2325	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2326	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2327	VCEA0A1CW476M	R	47	16V	Electrolytic	AB
C2340	VCEA0A1HW224M	R	0.22	50V	Electrolytic	AB
C2341	VCEA0A1HW104M	R	0.1	50V	Electrolytic	AB
C2342	VCEA0A1CW226M	R	22	16V	Electrolytic	AB
C2343	VCE9GA1HW105M	R	1	50V	Electrolytic	AB
C2344	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2345	VCCCCY1HH330J	R	33p	50V	Ceramic	AA
C2346	VCCCCY1HH330J	R	33p	50V	Ceramic	AA
C2348	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2349	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2350	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2351	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2352	VCEA0A1CW476M	R	47	16V	Electrolytic	AB
C2353	VCFYFA1HA124J	R	0.12	50V		AC
C2354	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2356	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2357	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2358	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2359	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C2360	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2361	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2362	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C2363	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA

RESISTORS

RJ2300	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ2301	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ2302	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ2303	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ2304	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ2306	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ2307	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA
RJ2309	VRS-CY1JF000J	R	0	1/16W	Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
RJ2310	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2311	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2312	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2314	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2315	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2316	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2318	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2319	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2320	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2321	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2322	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2323	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2327	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
R2309	VRS-CY1JF822J	R	8.2k 1/16W Metal Oxide	AA
R2311	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R2313	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R2314	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R2316	VRS-CY1JF222J	R	2.2k 1/16W Metal Oxide	AA
R2317	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R2318	VRS-CY1JF222J	R	2.2k 1/16W Metal Oxide	AA
R2340	VRS-CY1JF223J	R	22k 1/16W Metal Oxide	AA
R2341	VRS-CY1JF181J	R	180 1/16W Metal Oxide	AA
R2342	VRS-CY1JF183J	R	18k 1/16W Metal Oxide	AA
R2343	VRS-CY1JF561J	R	560 1/16W Metal Oxide	AA
R2344	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R2345	VRS-CY1JF183J	R	18k 1/16W Metal Oxide	AA
R2346	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R2348	VRS-CY1JF221J	R	220 1/16W Metal Oxide	AA
R2349	VRS-CY1JF393J	R	39k 1/16W Metal Oxide	AA
R2350	VRS-CY1JF152J	R	1.5k 1/16W Metal Oxide	AA
R2351	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R2352	VRS-CY1JF823J	R	82k 1/16W Metal Oxide	AA
R2353	VRS-CY1JF823J	R	82k 1/16W Metal Oxide	AA
R2354	VRS-CY1JF225J	R	2.2M 1/16W Metal Oxide	AA
R2355	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R2356	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R2357	VRS-CY1JF122J	R	1.2k 1/16W Metal Oxide	AA
R2358	VRS-CY1JF392J	R	3.9k 1/16W Metal Oxide	AA
R2359	VRS-CY1JF151J	R	150 1/16W Metal Oxide	AA
R2361	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R2362	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA

BALUNES

FB2300	RBLN-0062TAZZ	R	Balun, BLN-0062TA	AB
FB2302	RBLN-0062TAZZ	R	Balun, BLN-0062TA	AB
FB2303	RBLN-0067CEZZ	R	Balun, BLN-0067CE	AC
FB2304	RBLN-0067CEZZ	R	Balun, BLN-0067CE	AC
FB2305	RBLN-0062TAZZ	R	Balun, BLN-0062TA	AB
FB2399	RBLN-0037CEZZ	R	Balun, BLN-0037CE	AB

MISCELLANEOUS PARTS

SLD2301	PSLDM0260PEFW	R	Shield	AD
SLD2302	PSLDM0261PEFW	R	Shield	AC
P2300	QPLGZ0610CEZZ	R	Plug, 6Pin	AB
P2301	QPLGZ0810CEZZ	R	Plug, 8Pin	AD

PWB-D:DUNTKA127WET0
MONO BILLINGUAL UNIT(21XF30)

INTEGRATED CIRCUITS

IC3300	VHiTDA9821/-1	R	TDA9821	AR

TRANSISTORS

Q3300	VS2SC1815GW-1	R	2SC1815GW	AB

FILTER

CF3300	RFiLC0338CEZZ	R	Filter, FiLC0338CE	AG

CAPACITORS

C3300	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C3301	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C3302	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C3303	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C3304	VCEA0A1CW107M	R	100	16V	Electrolytic	AC
C3305	VCQYTA1HM223K	R	0.022	50V	Mylar	AB
C3306	VCKYPA1HB222K	R	2200p	50V	Ceramic	AA
C3310	VCQYTA1HM223K	R	0.022	50V	Mylar	AB
C3312	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C3313	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA

RESISTORS

R3300	VRD-RA2BE122J	R	1.2k	1/8W	Carbon	AA
R3301	VRD-RA2BE122J	R	1.2k	1/8W	Carbon	AA
R3302	VRD-RA2BE273J	R	27k	1/8W	Carbon	AA
R3303	VRD-RA2BE153J	R	15k	1/8W	Carbon	AA
R3304	VRD-RA2BE561J	R	560	1/8W	Carbon	AA
R3307	VRD-RA2BE561J	R	560	1/8W	Carbon	AA
R3312	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R3313	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA

MISCELLANEOUS PARTS

P3300	QPLGZ0610CEZZ	R	Plug, 6Pin	AB
P3301	QPLGZ0810CEZZ	R	Plug, 8Pin	AD

MISCELLANEOUS PARTS

⚠ ACC701	QACCZ3008KJSA		AC Cord	
SP301	VSP1206PB428A	R	Speaker	AR

SUPPLIED ACCESORIES

RRMCG0026KJSA	Infrared R-C
TiNS-0150KJZZ	Instruction Book (21XF50)
TiNS-0151KJZZ	Instruction Book (21XF30)

PACKING PARTS
(NOT REPLACEMENT ITEM)

SPAKC0141KJZZ	-	Packing Case	—
SPAKP0697CEZZ	-	Wrapping Paper	—
SPAKX0092KJZZ	-	Packing Foam.	—
SPAKX0093KJZZ	-	Packing Foam.	—
SSAKA0230CEZZ	-	Polyethylene Bag	—
TLABM0174KJZZ	-	Model Label(21XF30)	—
TLABM0175KJZZ	-	Model Label(21XF50)	—
TLABN0148CEZZ	-	Serial Label	—
TLABV0125KJZZ	-	Bar Code Label(21XF30)	—
TLABV0126KJZZ	-	Bar Code Label(21XF50)	—
TLABZ0130KJZZ	-	Label(21XF30)	—
TLABZ0131KJZZ	-	Label(21XF50)	—

Ref. No.	Part No.	★	Description	Code

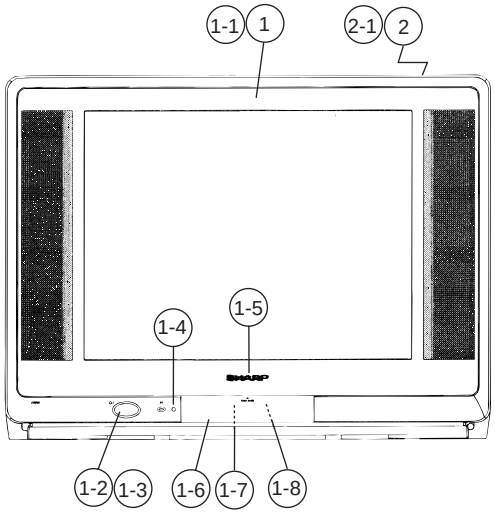
CABINET PARTS

21XF30

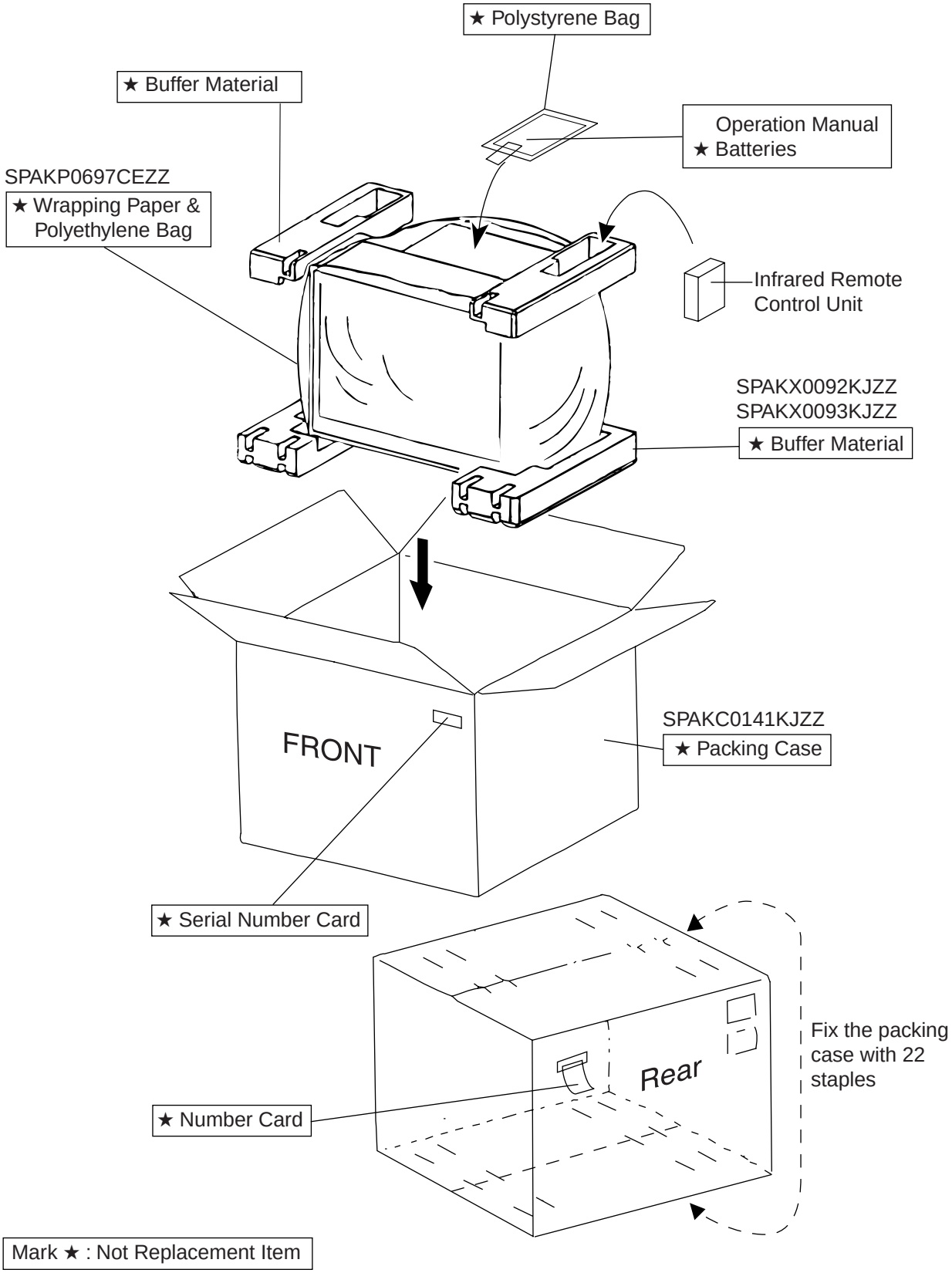
1	CCABA2715WEA0		Front Cabinet Ass'y	
1-1	*Not Avairable*	-	Front Cabinet	—
1-2	JBTN-0395PESA	R	Power Button	AG
1-3	MSPRC0005PEFW	R	Power Spring	AB
1-4	GCOVA0145PESA	R	R/C Cover	AD
1-5	HBDGB3142CESA	R	SHARP Badge	AG
1-6	GDORF0196PESA	R	Door	AN
1-7	PKAi-0007PE00	R	Door Latch	AE
1-8	HiNDP0294PESA	R	Indication Plate	AE
2	CCABB2463WEA0		Rear Cabinet Ass'y	
2-2	Not Avairable	-	Rear Cabinet	—

21XF50

1	CCABA2716WEA0		Front Cabinet Ass'y	
1-1	*Not Avairable*	-	Front Cabinet	—
1-2	JBTN-0395PESA	R	Power Button	AG
1-3	MSPRC0005PEFW	R	Power Spring	AB
1-4	GCOVA0145PESA	R	R/C Cover	AD
1-5	HBDGB3142CESA	R	SHARP Badge	AG
1-6	GDORF0196PESA	R	Door	AN
1-7	PKAi-0007PE00	R	Door Latch	AE
1-8	HiNDP0294PESA	R	Indication Plate	AE
2	CCABB2463WEA0		Rear Cabinet Ass'y	
2-2	Not Avairable	-	Rear Cabinet	—



PACKING OF THE SET



Mark ★ : Not Replacement Item

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